

# FLIGHT

## The AIRCRAFT ENGINEER AND AIRSHIPS

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Founder and Editor: STANLEY SPOONER

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### EDITORIAL COMMENT



It is extremely gratifying to note the activity of the Executive Committee of the London Chamber of Commerce in pressing the case for air mails. The most healthy way in which air transport can expand is in response to demands from interested sections of the public. We have for a long time past looked forward to the time when such demands should arise. For a long time, a time which was deplorably though inevitably long, we have seen the Air Ministry and certain other agencies undertaking propaganda and demonstrations with the deliberate object of stimulating what is called air-mindedness. The campaign has been at times expensive, and at times it has been not altogether dignified. We have wearied of giving some measure of applause to "stunt" flights which we knew served little useful purpose, but which aroused some public interest in the air. We have not, it is true, wilted under the sneers and indifference of established commercial interests, because we well knew that our time would come. But, none the less, it was rather an exasperating time while we waited for the solid British business man to realise that aircraft could really give him something which he valued.

Now, at last, that for which we have longed has happened. The first sign of grace was seen in Australia, when a few years ago the people of Wyndham district in the far north petitioned the Commonwealth Government for an extension of the West Australian airway from Derby to Wyndham. Their desire has been realised in the last few weeks. Next we have seen the great Corporations of Manchester, Liverpool, and Birmingham arranging with Imperial Airways for their cities to be connected directly with the cross-Channel air services. Now, more important than all, the London Chamber of Commerce is agitating for rapid, night-flying, air mail services up to a thousand miles from Croydon. If we live long enough, we may even hear of the Calcutta Chamber of Commerce urging the Indian

### DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list—

|         |   |
|---------|---|
| 1930    |   |
| Oct. 25 | .. Air Display before Imperial Conference, at Croydon.  |
| Oct. 25 | .. Meeting of Assoc. of Northern Gliding Clubs, Hotel Metropole, Leeds.                                   |
| Oct. 30 | .. Lecture, "Ground Engineers," by W. J. Norton, before Westland Aircraft Soc.                            |
| Nov. 12 | .. R.U.S.I. Lecture: "Work of the Air Force in Aden," by Sqdn.-Ldr. the Hon. R. A. Cochrane. 3 p.m.       |
| Nov. 13 | .. Lecture, "Testing the Control of Aeroplanes," by H. L. Stevens, before R.Ae.S.                         |
| Nov. 13 | .. Lecture, "Triplex Glass Making," before Westland Aircraft Soc.   |
| Nov. 20 | .. Lecture, "Recent Developments in Engine Cooling," by Capt. H. Swan, before R.Ae.S.                     |
| Nov. 20 | .. Lecture, "Aircraft Detail Design—The Shops' Viewpoint," by W. G. Gibson, before Westland Aircraft Soc. |
| Nov. 25 | .. Norfolk and Norwich Ae.C. Annual Ball, Andrews Hall, Norwich.  |
| Nov. 28 | .. Lecture, "Wapiti in India," by Gr.-Capt. R. H. Verney, before Westland Aircraft Soc.                   |
| Dec. 4  | .. Lecture, "The Four-Foot Wind Tunnel," by H. Glauert, before R.Ae.S.                                    |
| Dec. 5  | .. Lecture, "Recent Long-Distance Flights," by Capt. C. D. Barnard, before Westland Aircraft Soc.         |

Government to expedite the transit of mails from Karachi!

As a representative commercial body, the London Chamber of Commerce commands great weight, and one would imagine that the very moment when it began to show signs of taking a real interest in air mails, the Postmaster-General would listen to its voice with all readiness to oblige, while the Air Ministry would grow almost delirious with delight and would throw all its persuasiveness and all its technical knowledge into the task of gratifying and satisfying the greatest convert to its creed which it has ever secured.

What has happened? To be quite frank, we do not know. We have not seen the replies of the Postmaster-General and the Air Ministry to the suggestion of the London Chamber of Commerce that mails should be carried by special mail aeroplanes which would fly by night. We do not consider that the actual replies are a matter of first-class importance. What is of importance is that the general tenor of these replies ought to satisfy the London Chamber of Commerce. Whatever may be the position of the Postmaster-General, the Air Ministry should appear in this matter as the salesman in a store who has just received an enquiry from the most influential client who has ever entered the doors. If such a salesman were to let such a customer leave after his first visit with a feeling of dissatisfaction, his next interview would probably be a *mauvais quart d'heure* with the general manager. It is clear from the copies of correspondence published on another page that the London Chamber of Commerce does not feel at all satisfied by the replies received. In this correspondence the Chamber "has to record its disappointment" at one part of the Postmaster-General's reply. In addressing the Air Ministry it "regrets to observe" that the Air Ministry and the Postmaster-General are inclined to place the onus upon each other. The Chamber is evidently not at all impressed.

We find it less difficult to understand the position which the Postmaster-General has apparently taken up than to follow the presumed line of the Air Ministry. The Postmaster-General certainly cannot go beyond what the air experts tell him is feasible, though he may be, and sometimes has been, sceptical of their optimistic claims. If the Air Ministry asserts that mails can be carried at 150 m.p.h. for 24 hours per diem, he certainly ought to be willing to investigate the claim. But surely the Air Ministry ought to be only too ready to show that it is able to arrange for machines to do what the London Chamber wants done. If the Ministry could and would do that, and then the Postmaster-General raised objections to making use of the facilities, we should all know where we stood, where to start an enquiry, and whom to blame if blame were necessary. We admit to a feeling of sympathy with the attitude of the Post Office 10 years ago, when it discounted the weight placed by air experts on speed by urging the lack of a guarantee of regularity. Now we believe that a speed in the neighbourhood of 150 m.p.h. could be maintained along a route with a very high degree of regularity. We agree that regularity must be much higher than 99 per cent.

We think that the line which the Air Ministry ought to have taken in replying to the London Chamber of Commerce should have been to show that an average speed and a degree of regularity as mentioned above are now able to be attained. It would then have lain with the Post Office to challenge the figures if it felt it necessary to do so. If they could be made good, there would surely be no excuse for refusing to make use of such a means of expediting the mails. The Air Ministry, however, appears to have laid stress on some "limiting factors." The Chamber of Commerce has noted these limiting factors with regret, but doubts whether these considerations are, in fact, important. It is not an edifying spectacle when a commercial body has to egg on the Air Ministry, and the latter holds back and raises objections. We should expect the Air Ministry to be the driving force, not the drag on the wheels.

It is not always a sensible occupation to spend much time and energy in declaiming against "red tape." If that expression means sticking to the wording of a rule in defiance of its spirit, it is an extremely obnoxious practice. But Government departments, like private businesses and private individuals, must work on a system, and if each were to attempt to do the work of another the result would be confusion. In this case the London Chamber of Commerce considers that the Air Ministry and the Postmaster-General are inclined each to place the onus upon the other. That certainly ought not to be the case. It will be, indeed, grievous if rapid air mails are crushed between the upper and the nether millstone.

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"Stunt" flights were alluded to somewhat contemptuously above, and we have no intention of eating our words. Hinkler's solo flight to Australia in a Avian two and a half years ago had a significance which must be lacking in any subsequent lowering of his record. Considering the improvements to engines and aircraft which are always taking place, it is a marvel that Hinkler's record should have stood for so long. We prefer to regard those two great Australians, Hinkler and Kingsford Smith, apart. Comparison would be as futile as it would be odious. Hinkler's laurels, won as test pilot, racing pilot, and pioneer of great solo flights, will never wither. Kingsford Smith stands out as the greatest modern touring pilot of the world. Each one of his flights may have come into the category of "stunt," but the cumulative effect of them all is well-nigh bewildering. Outside the Polar regions, he has made almost every great flight which could be made. Only this last flight has been made solo. His method has been to take advantage of every modern device which could help him and obviate danger. Team work, the best equipment, very careful training—these have been his methods. What appeared hazardous he has made to look safe. Success has crowned his every effort, for Fortune favours good organisation. FLIGHT wishes him even greater success in his coming venture into matrimony.

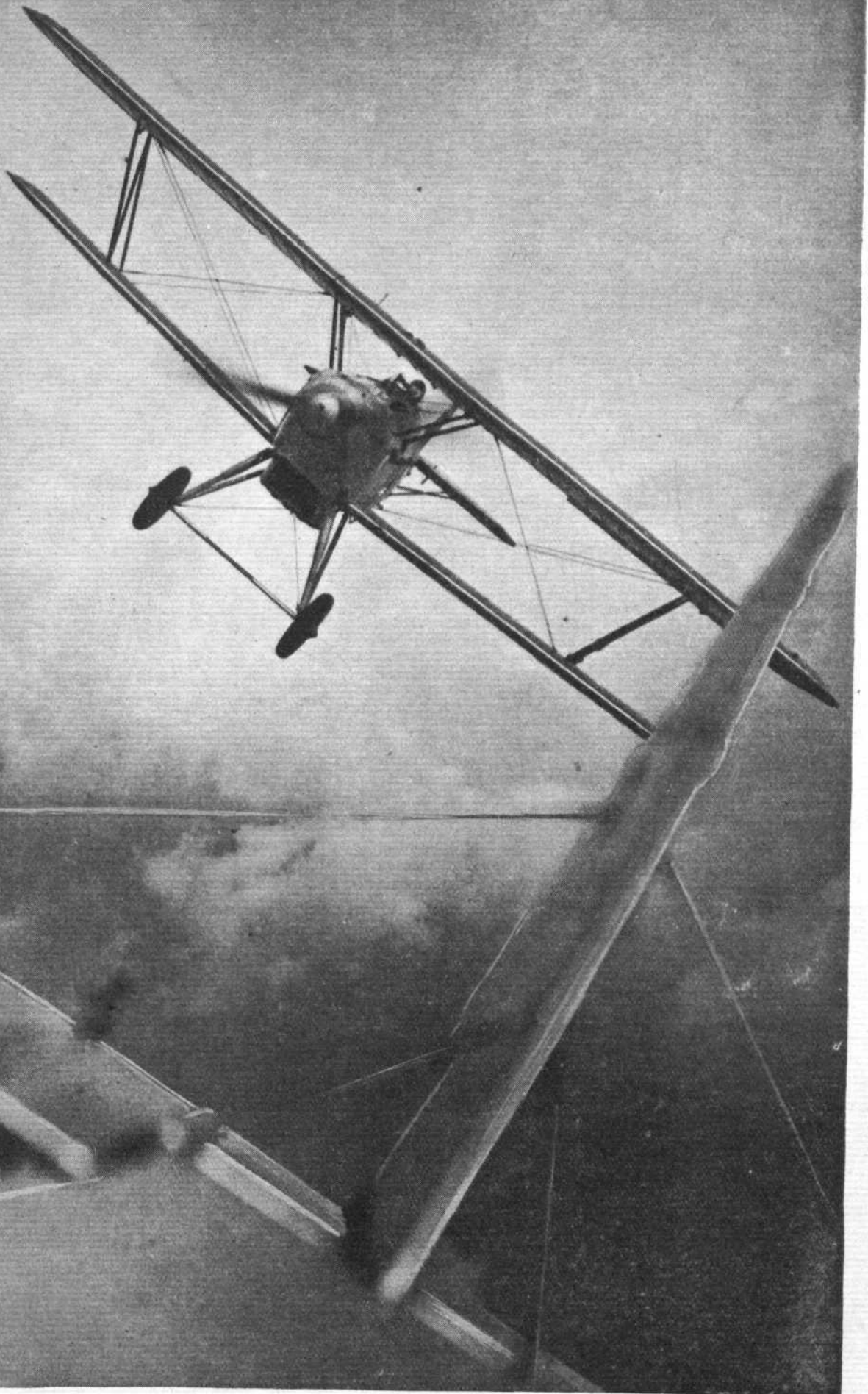
**Kingsford  
Smith**





## THE LATEST FLEET FIGHTER

8325



AS THE REAR GUNNER SEES IT: The Hawker Fleet Fighter with Rolls-Royce F.M.S. engine photographed from a Hawker "Hart." Mr. Bulman was piloting the "Hart," and the single-seater was piloted by Mr. Sayer. Note that the two machines were making a turn, simulating a fight in which the two-seater is endeavouring to prevent the single-seater from getting "on its tail." (FLIGHT Photo.)

## THE RACE TO AUSTRALIA

**R**ECORDS are made to be broken, and that established in 1928, for a flight to Australia, by Bert Hinkler, has been shattered by Wing-Commander Kingsford-Smith, who has succeeded in flying from England to Australia in nearly ten days. He is also an easy "winner"—a "fly-over," in fact—in the Australian Air "Race" that has been in progress during the last week or two although he started at "Scratch."

Kingsford-Smith's achievement is undoubtedly a remarkable one—perhaps the most noteworthy light plane flight that has yet been made—for with one or two exceptions, his daily "hops" were in the neighbourhood of 1,000 miles, and only once was he delayed.

Of the other pilots in the on-to-Australia contest, Capt. F. R. Matthews was the only one to reach his objective. He left Croydon on September 16 in a "Puss Moth," but was delayed by two forced landings, which damaged his machine, and he did not arrive at Port Darwin until October 18.

Flight-Lieut. C. W. Hill, who left Lympne on October 5 in a "Gipsy Moth," on the other hand, had been making excellent progress, and but for an unlucky crash only a few hundred miles from goal had a good chance of beating Hinkler's record by a day or so. It was on October 17, when flying from Sourabaya to Atamboea he made a forced landing *en route*, and when taking off for Darwin next day he crashed. He was unhurt, but his machine was badly smashed.

Meanwhile, Kingsford-Smith, who left Heston in his Avro "Avian Sports" ("Gipsy II") *Southern Cross Junior* on October 9, was rapidly overhauling Hill. He reached Sourabaya on October 17, and left for Port Darwin next day. Passing over Timor he saw Hill's crashed machine, and turned back to see if he could give his rival any help. Their meeting was dramatic.

"His flight," said Kingsford-Smith, "was infinitely more difficult and therefore a finer achievement than mine. Although Hill showed his disappointment in his face, he met me with a smile. He asked me whether I had a collapsible boat, and when I told him I had not he said, 'Well, take mine. I shan't need it now.' In thanking him I had to turn away to hide my emotion."

Kingsford-Smith started on the last lap after finding he could not help Hill, and arrived at Darwin early on October 19, having accomplished the 10,000 miles in 9 days 21 hr. 40 min.

One of the first messages of congratulation Kingsford-Smith received was from Hinkler.

A telegram was despatched from Sandringham requesting the Acting Governor of Australia to convey a message of congratulation from the King to Wing-Commander Kingsford-Smith. Congratulatory telegrams were also sent by Mr. Ramsay MacDonald and Lord Amulree, the new Secretary for Air.



Wing-Commr. Kingsford-Smith.

It is reported from Melbourne that Mr. Fenton, acting Prime Minister of Australia, and Mr. Green, the Minister of Defence, have met to discuss a suitable form of recognition for Wing-Commander Kingsford-Smith, and it is thought that he will be made honorary Air Commodore in the Royal Australian Air Force.

On October 20, Kingsford-Smith left Darwin *en route* for Sydney, and flew to Cloncurry; he reached Brisbane next day.

### Flights to Australia Compared.

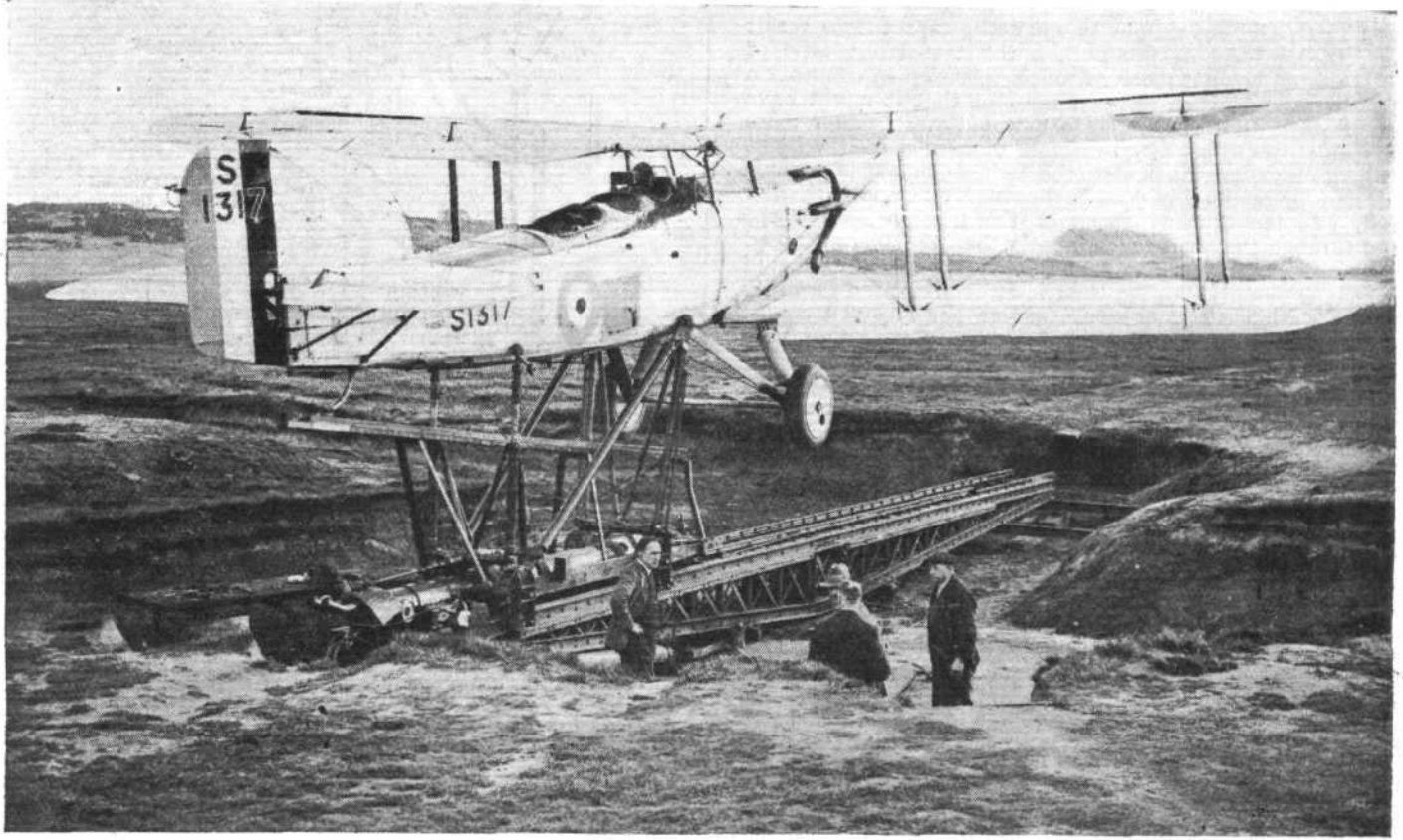
| Day | Hinkler.      | Amy Johnson.   | Hill.          | Kingsford-Smith. |
|-----|---------------|----------------|----------------|------------------|
| 1   | Rome          | Vienna         | Marseilles     | Rome.            |
| 2   | Malta         | Constantinople | Budapest       | Athens.          |
| 3   | Benghazi      | Aleppo         | Constantinople | Aleppo.          |
| 4   | Tobruk        | Baghdad        | —              | Bushire.         |
| 5   | Ramleh        | Bander Abbas   | Aleppo         | Karachi.         |
| 6   | Basra         | Karachi        | Bushire        | Allahabad.       |
| 7   | Jask          | Jhansi         | Karachi        | Rangoon.         |
| 8   | Karachi       | Calcutta       | Allahabad      | Singapore.       |
| 9   | Cawnpore      | Rangoon        | Rangoon        | Sourabaya.       |
| 10  | Calcutta      | —              | Singora        | Atamboea.        |
| 11  | Rangoon       | —              | Singapore      | Port Darwin      |
| 12  | Victoria Pnt. | Bangkok        | Chilitan       | —                |
| 13  | Singapore     | Singora        | Bima           | —                |
| 14  | Bandoeng      | Singapore      | Atamboea       | —                |
| 15  | Bima          | Tjomal         | —              | —                |
| 16  | Pt. Darwin    | Sourabaya      | —              | —                |
| 19  | —             | Atamboea       | —              | —                |
| 20  | —             | Pt. Darwin     | —              | —                |



THE "SOUTHERN CROSS JNR.": Kingsford-Smith's Avro "Avian Sports" (de Havilland "Gipsy II" engine) on which he accomplished his record flight to Australia.



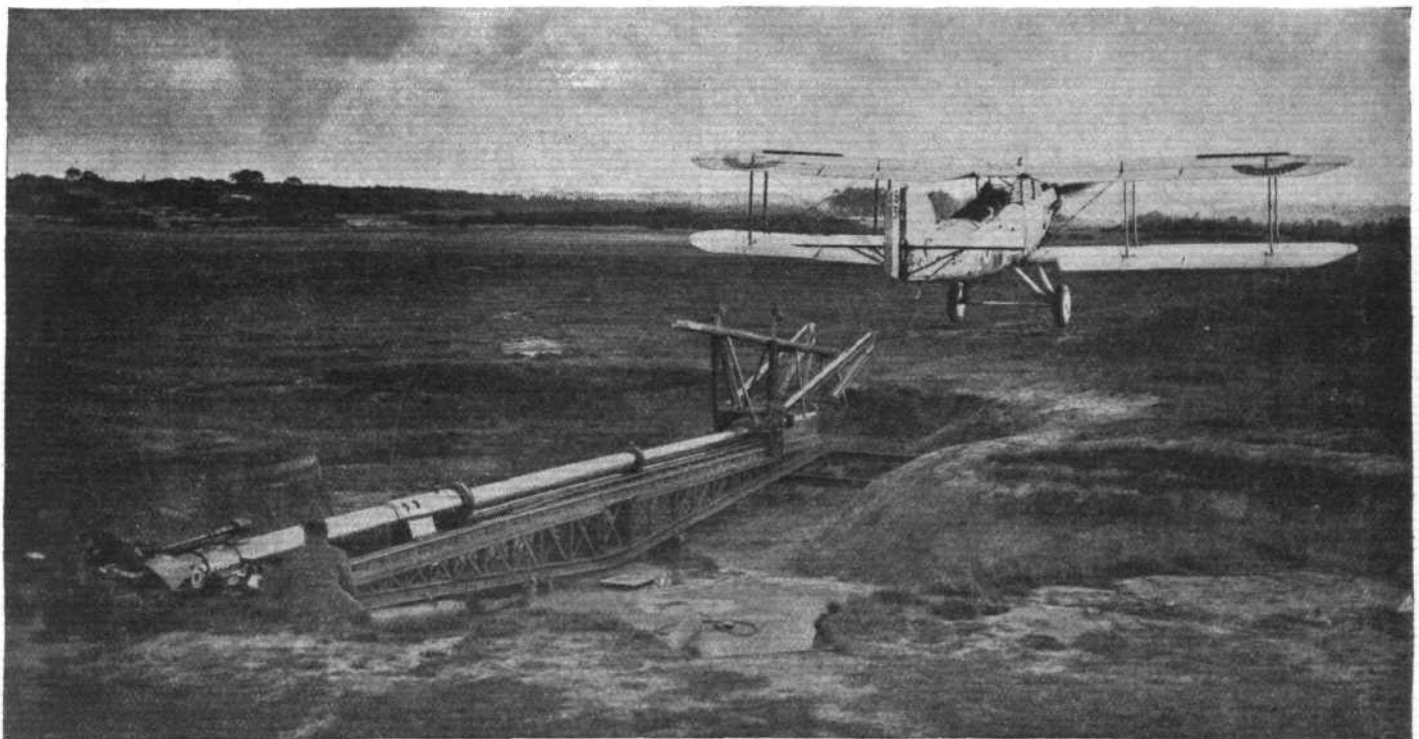
# CATAPULT LAUNCHING OF AIRCRAFT



**H**ITHERTO but little has been permitted to become known about the work done in Great Britain on the development of catapult launching of aircraft. The United States of America have made extensive use of catapults for launching aircraft from men-of-war, and in Europe a good deal of work has been done by the Heinkel company of Warnemünde, more particularly with a view to launching civil aircraft from liners.

In Great Britain this work has all been undertaken by Government departments and by the services, and as a result the general public has learnt practically nothing about it.

A certain amount of information has now been "released" for publication, and the photographs on this page show the catapult with which experiments are being carried out by the Royal Aircraft Establishment at Farnborough. It will be observed from the upper photograph that the aircraft, a Fairey III F, is supported at four points, and has its tail skid resting in a guide rail. The compressed air is contained in cylinders mounted under the catapult structure, and the ram is in the form of a three-joint telescopic tube. The lower photograph shows the III F at the moment of leaving the catapult.



OFF: A Fairey III F shown at the moment of leaving the catapult. Note that the Handley Page slots are open.

# A TWO-STROKE AERO ENGINE

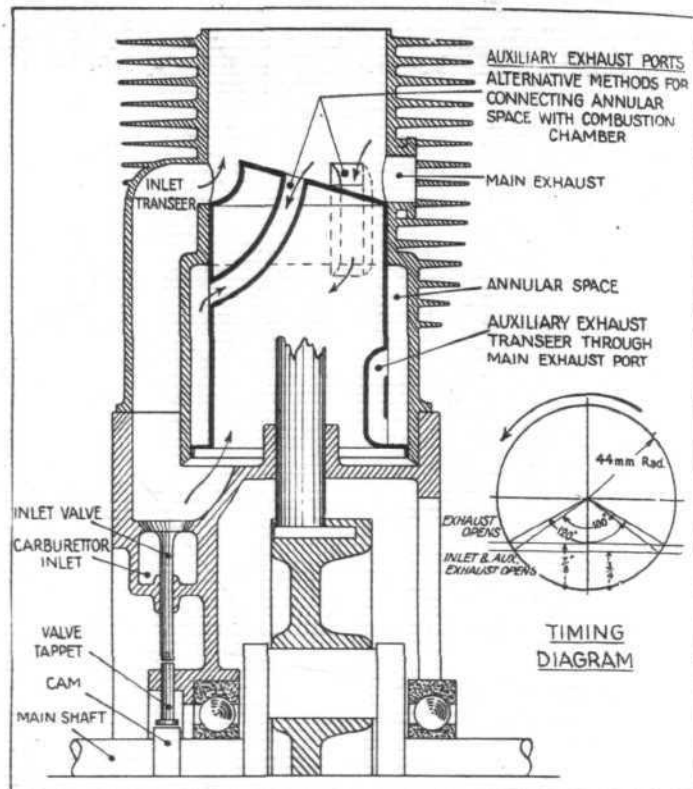
## The Caunter Radial

**A**LTHOUGH its simplicity might be expected to result in low cost of production, the two-stroke type of engine has not received much attention in connection with aircraft. This in spite of the fact that it might have been thought that the two-stroke would work under more favourable conditions in an aircraft than in a road vehicle. The load on the engine is more constant, so that it is possible to design for reasonably good fuel economy at one particular speed, *i.e.*, the cruising speed of the machine, while the speed through the air is much greater than the average speed of a car or motor-cycle, so that the cooling difficulty should not be insurmountable. Yet the two-stroke has been curiously neglected, while the four-stroke engine has received a vast amount of attention and has undergone a period of very intensive development.

That the design of a two-stroke aero engine is no easy task may be taken for granted. Of useful data we have practically none, and so a lot of new ground has to be broken before one can expect to attain success. Yet the simplicity of the two-stroke principle should, if the various "snags" can be overcome, make mass production at a very low price possible. That there will be "snags" is scarcely to be doubted. One of the first arguments against the two-stroke is that it is extravagant in fuel. It would seem that this drawback can be largely overcome by designing for the cruising speed. That the engine is extravagant in fuel at other speeds would not then matter a great deal. Low efficiency, due to insufficient scavenging, is another time-honoured criticism. And the impossibility of using crankcase compression in a multi-cylinder radial is generally held to imply that the beautiful simplicity with which the two-stroke started will be lost in an engine designed for use in aircraft, where weight considerations, etc., preclude the use of a fly-wheel and call for multi-cylinders.

Mr. C. F. Caunter has for many years held the view that it is possible to solve all these various problems, and he has now nearing completion an experimental engine which represents his attempt to evolve the two-stroke aero engine.

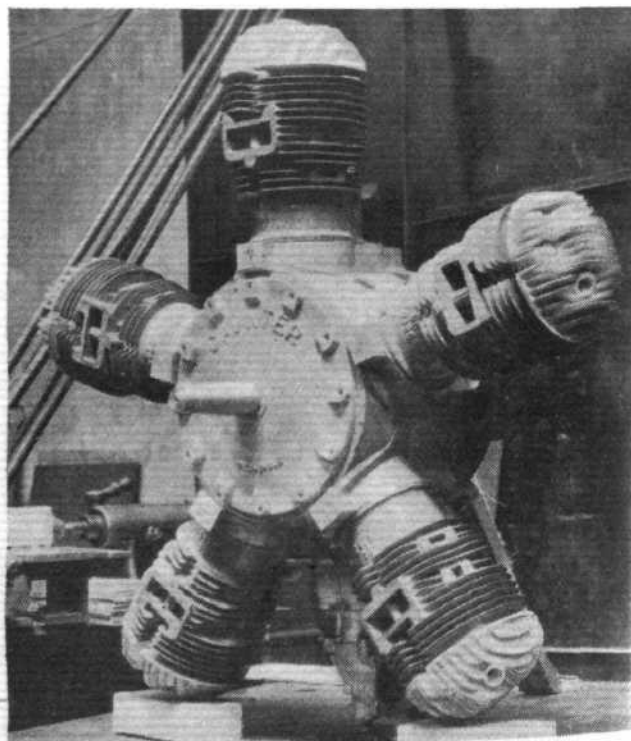
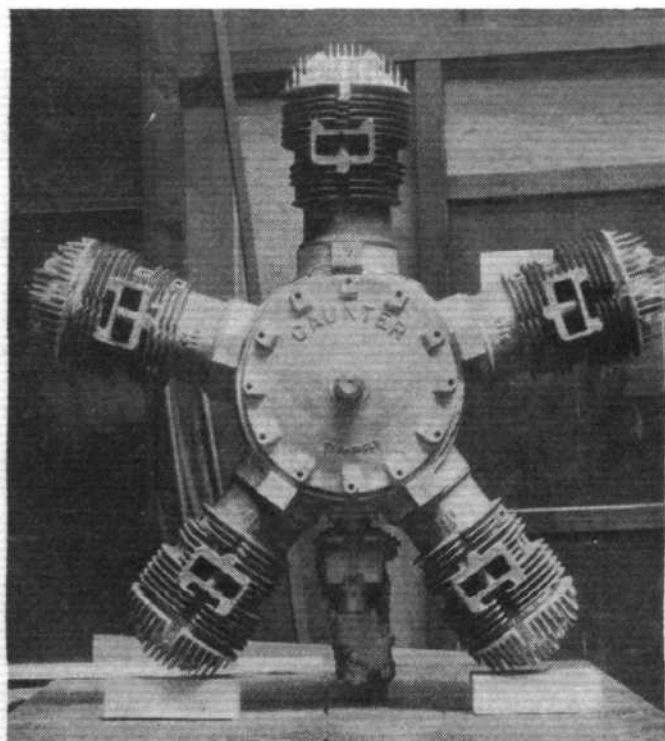
In the Caunter two-stroke use is made of a stepped piston, and perhaps the working principle can best be explained by reference to the diagrammatic sketch of a cylinder. On its up stroke the stepped piston draws a charge from the induction ring, through the inlet valve. In the diagram a poppet valve is shown, but in the actual engine a flap valve is used. As it descends the piston forces the charge from its under



**Diagrammatic Representation of principle of Caunter Two-stroke Engine.** The actual engine does not have the transfer passage through the piston, and the inlet valve is of the flap type, with automatic operation.

side through the usual inlet transfer to the top of the piston. On rising, the piston compresses the charge, which is fired in the usual manner. The main exhaust port is opened by the piston in the usual way. In the meantime, the step of the piston has caused a reduced pressure in the annular space, and when the auxiliary exhaust port is uncovered any remaining exhaust gas is drawn into the annular space and expelled through the main exhaust port via the transfer in the piston on the next up-stroke. Mr. Caunter expects in this way to attain good scavenging.

One feature in the engine which is not shown in the diagram  
(Concluded on next page)



**TWO VIEWS OF THE CAUNTER TWO-STROKE ENGINE:** The main exhaust ports are on the front face of the cylinders. When the photographs were taken the small transfer pipes for the auxiliary exhaust ports were not in place, but the auxiliary ports themselves can be seen in the right-hand photograph.



# THE ROYAL AERO CLUB OF THE UNITED KINGDOM

## OFFICIAL NOTICES TO MEMBERS

**Aviators' Certificates.**—As notified in FLIGHT for October 17, the following Aviators' Certificates have been granted :—

|      |                                 |                                      |      |                               |  |
|------|---------------------------------|--------------------------------------|------|-------------------------------|--|
| 9409 | Edward Morgan Rossiter..        | Hanworth Club (N.F.S.).              | 9452 | John Peter Poptie ..          | Nottingham A.C. (N.F.S.).                |
| 9410 | John Crow Richardson ..         | Hanworth Club (N.F.S.).              | 9453 | Bernard Orlando Davis ..      | London A.C. and Norfolk and Norwich A.C. |
| 9411 | Richard P. Targett-Adams ..     | Hanworth Club (N.F.S.).              | 9454 | Harry F. G. Dockrell ..       | Hanworth Club (N.F.S.).                  |
| 9412 | Borras N. H. Whiteside ..       | Hanworth Club (N.F.S.).              | 9455 | Julius Carmelus Pompa ..      | London A.C.                              |
| 9413 | Arthur H. G. Dunkerley ..       | Sussex A.C.                          | 9456 | Ronald Eric Laurence Beere .. | D.W. F.I.S.                              |
| 9414 | Thomas W. T. Blackwell..        | Brooklands F.I.S.                    | 9457 | Edward Vincent Beaumont ..    | Norfolk and Norwich A.C.                 |
| 9415 | George Henry Webb ..            | London A.C.                          | 9458 | Mustapha Abu Zahra ..         | De Havilland F.I.S.                      |
| 9419 | Oswald Marchant Hills ..        | London A.C.                          | 9459 | Edward Antony Minc. in ..     | Bristol and Wessex A.C.                  |
| 9420 | Gerard Alan Turnbull ..         | Brooklands F.I.S.                    | 9460 | Stanley Davenport ..          | Airwork F.I.S.                           |
| 9421 | Sydney Charles Richards..       | London A.C.                          | 9461 | Harold Swann ..               | Airwork F.I.S.                           |
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| 9418 | Humphrey Cecil Coysh ..         | Hanworth Club (N.F.S.).              | 9464 | Clyde Cornwall Fenton ..      | London A.C.                              |
| 9422 | Oswald Birrell Deiter ..        | Hanworth Club (N.F.S.).              | 9465 | Eric Hyde Lord Sexton ..      | Hanworth Club (N.F.S.).                  |
| 9423 | Sidney Brown ..                 | Leicestershire A.C.                  | 9466 | Henry Herbert Gardner ..      | Hampshire A.C.                           |
| 9424 | James W. J. Mackenzie ..        | Norfolk and Norwich A.C.             | 9467 | Michael Hawken Pearce ..      | Hanworth Club (N.F.S.).                  |
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| 9426 | Frederick R. G. Spikins ..      | Hanworth Club (N.F.S.).              | 9469 | Christopher F. M. Rambaut ..  | Northamptonshire A.C.                    |
| 9427 | Manohar Gopal Pradhan ..        | De Havilland Fl. School.             | 9470 | Eric Frank Bayes..            | Northamptonshire A.C.                    |
| 9428 | Kenneth E. T. Wordingham ..     | Newcastle A.C.                       | 9471 | Laurence Lipton ..            | London A.C.                              |
| 9429 | Bama Charan Das ..              | Cinque Ports F.I.C.                  | 9472 | Norman Edward Holden..        | —  |
| 9430 | Montagu Scott McMurdo..         | London A.C.                          | 9473 | Krishan Lal Puri ..           | De Havilland F.I.S.                      |
| 9431 | Dick Phelps Fullerton, Jnr.     | Hanworth Club (N.F.S.).              | 9474 | Millard Fillmore Brown ..     | Phillips and Powis F.I.S.                |
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| 9434 | John Edgcombe Doyle ..          | Haldon F.I.S.                        | 9477 | Jack Williamson Robertson ..  | Scottish F.I.C.                          |
| 9435 | Percy Walter James ..           | Northamptonshire A.C.                | 9478 | John Weston Warner ..         | Airwork F.I.S.                           |
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| 9438 | Henry Clement Medlam ..         | London A.C.                          | 9481 | Phyllis Rosemary Carpmal ..   | Hanworth Club (N.F.S.).                  |
| 9439 | Ronald Lawrence Moss ..         | Hampshire A.C.                       | 9482 | Geoffrey Arthur Carpmal ..    | Hanworth Club (N.F.S.).                  |
| 9440 | Maurice Oswald Johnston ..      | Hampshire A.C.                       | 9483 | Aly Riad ..                   | De Havilland F.I.S.                      |
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| 9447 | Marjorie Constance Hackforth .. | Norfolk and Norwich A.C.             | 9490 | Zanita Margaret Rulach ..     | Bristol and Wessex A.C.                  |
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| 9449 | Francis Rodwell Banks ..        | Brooklands F.I.S.                    | 9492 | Algernon M. D. Grenfell ..    | Liverpool and Dist. A.C.                 |
| 9450 | John Selby Hall ..              | Hampshire A.C.                       | 9493 | Erik Blyth Nelson ..          | Brooklands F.I.S.                        |
| 9451 | Oscar Victor Sayer Heath ..     | Cinque Ports F.I.C.                  | 9494 | Edward Simon Willox ..        | Brooklands F.I.S.                        |

Offices : THE ROYAL AERO CLUB

3, CLIFFORD STREET, LONDON, W.1.

H. E. PERRIN Secretary.

## CAUNTER TWO-STROKE AERO ENGINE

(Concluded from previous page)

is the manner in which the closed lower end of the cylinder permits the passage of the connecting rod. For this purpose, Mr. Caunter uses an arrangement consisting of a large phosphor-bronze ball in which the tubular connecting rod slides. This ball is held in an aluminium cage which, in turn, slides on a phosphor-bronze plate screwed to the cylinder-closing face of the crankcase. (This face is, of course, slotted for the angular movement of the connecting rod.) This pressure-retaining slide will impose a certain amount of side load on the connecting rod, but as it is quite light, and the pressure on the under side of the piston will not exceed some 10 lb./sq. in., it is thought that no trouble will be encountered.

The capacity of the pump end of the cylinder is 50 per cent. in excess of that of the working part of the cylinder, so that a certain degree of supercharging should be attained.

As for the actual experimental engine, there is little point in going into great detail, as Mr. Caunter has already seen a number of ways in which detail improvements resulting in

lower weight can be made. The engine is a 5-cylinder radial air cooled, with cast-iron cylinders, aluminium cylinder heads, an "Alpax" crankcase cast in one piece, aluminium pistons, and steel tubular connecting rods having slipper type big ends retained on the crankpin by retaining rings.

The cylinders have a bore of 85 mm. and the stroke is 88 mm. With 5 cylinders this gives a capacity of 2½ litres. Mr. Caunter expects to obtain from this capacity about 60 h.p. at 2,000 r.p.m. The first engine is, as is very natural, somewhat heavy (probably about 3 lb./h.p.), but there should be no great difficulty in reducing the weight in subsequent engines.

Hitherto, Mr. Caunter has financed the engine entirely out of his own pocket, and he hopes to have this first engine finished during the next month or so. As a result of the actual running tests it should be possible to estimate whether or not the Caunter system is practicable. If the first engine "works," Mr. Caunter hopes to obtain capital for the further development of the engine. Anyone interested can get in touch with Mr. C. F. Caunter by writing to him at 53, Shirehall Park, Hendon, London, N.W.4.

## Croydon Aerodrome in Olympia

A 7-FT. diorama of Croydon aerodrome, not previously exhibited, is shown by "Pratt's" in the National Hall, Olympia, at the Motor Show. The whole of the aerodrome is represented in miniature, including the company's aero

service station and other filling points, where models of the big air liners are shown filling up. A prominent feature of the stand is a full-size petrol pump plated with real gold, which visitors are invited to use as an easily found rendezvous.



# PRIVATE FLYING AND CLUB NEWS



## DE HAVILLAND Successes

Abroad.—It is gratifying to be able to record successes with British aircraft in competitions abroad. Two recent ones of note go to the credit of de Havilland Aircraft, and while these were established last month we have been unable to refer to them before now.

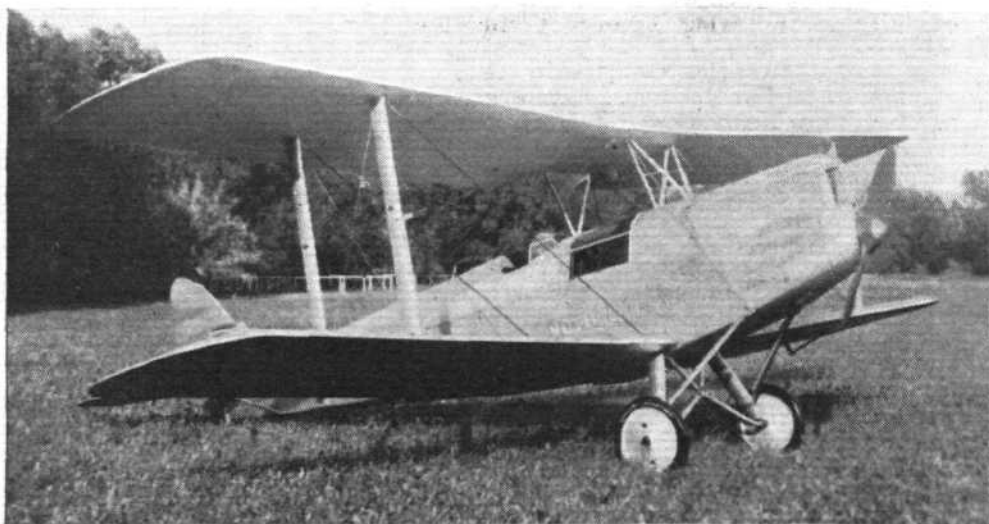
The first achievement was the winning of the 1930 Zenith Cup contest by M. Edward Bret with his "Gipsy Moth" on September 27, when he covered a distance of 1,669 km. (1,036 miles) at an average speed of 179 k.p.h. (112 m.p.h.). This contest is open to light aircraft weighing less than 400 kg. (880 lb.) empty, subject to allowance of 15 per cent., the winner having to make the fastest time (including stops) over a circuit Orly-Lyon (Bron), Marseilles (Marignane), Toulouse, Bordeaux, Tours, compulsory landings being made at these points.

M. Bret started from Bordeaux, and made landings at Tours, Orly, Lyon, Marseilles, Toulouse, and back to Bordeaux. His flying time for the circuit was 8 hrs. 46 min., or 9 hr. 22 min. including stops. He carried M. Ginieis as passenger, and used K.L.G. plugs, Dunlop tyres, Castrol oil, Stanovo petrol, and B.T.H. magnetos.

The machine used was the "Gipsy II Moth," which Mr. A. S. Butler flew in this year's King's Cup race—which made the fastest time. The engine was a standard "Gipsy II," but, as will be seen from the accompanying illustration, the machine has been considerably cleaned up. M. Bret, who was one of the first French "Moth" owners, acquired this machine a little while back.

Second place in this contest was obtained by M. le Comte de Villefranche, on a British-built "Gipsy I Moth." Our readers will, perhaps, remember that last year's Zenith Cup was won by Capt. H. S. Broad, on a special "Gipsy Moth."

Another D.H. success was in Belgium at the Royal Aero Club of Belgium Aviation Meeting at St. Hubert, on September 28. On this occasion M. Hauet won the Belgian Coupe Challenge International in his recently acquired "Puss Moth." He completed a circuit of Belgium of 804.5 km. (500 miles), with three compulsory stops, in five hours total time. With



M. Edward Bret's "Gipsy Moth" on which he won the Zenith Cup.

three up and 35 gal. of petrol, his machine was loaded to 1,900 lb. M. Hauet learnt to fly at Hanworth and was one of the first private owners to obtain delivery of a "Puss Moth."

**CEYLON'S First Air Pilot.**—The first Ceylon Muslim to learn to fly, Mr. Zubay Caffoor, has just qualified for his "A" licence at the N.F.S. School at Hanworth. Mr. Caffoor, it will be remembered from previous reports in FLIGHT, started his instruction at the Cinque Ports Flying Club at Lympne, and afterwards, when his business brought him to London, he transferred to Hanworth. When he returns home Mr. Caffoor hopes to take a machine back with him to Ceylon—probably by air.

**BEAGLES and Eagles.**—As the Aerial Beagle Meet, arranged by the Northamptonshire Aero Club in conjunction with the Pipewell Foct Beagles, for October 11, had to be postponed owing to the funeral at Cardington of the R 101 victims, it has been arranged to hold the meet on October 25, at Sywell aerodrome at 2 p.m. Flying visitors are requested to arrive by 12.30 p.m.

The N.A.C. Annual Ball will be held at the Salon-de-Danse, Northampton, on November 7, at 9 p.m. (aeroplanes, 2 a.m.). Tickets, 12s. 6d., including supper, should be obtained at once. R. Gubertini and his Savoy Hotel Band will play.

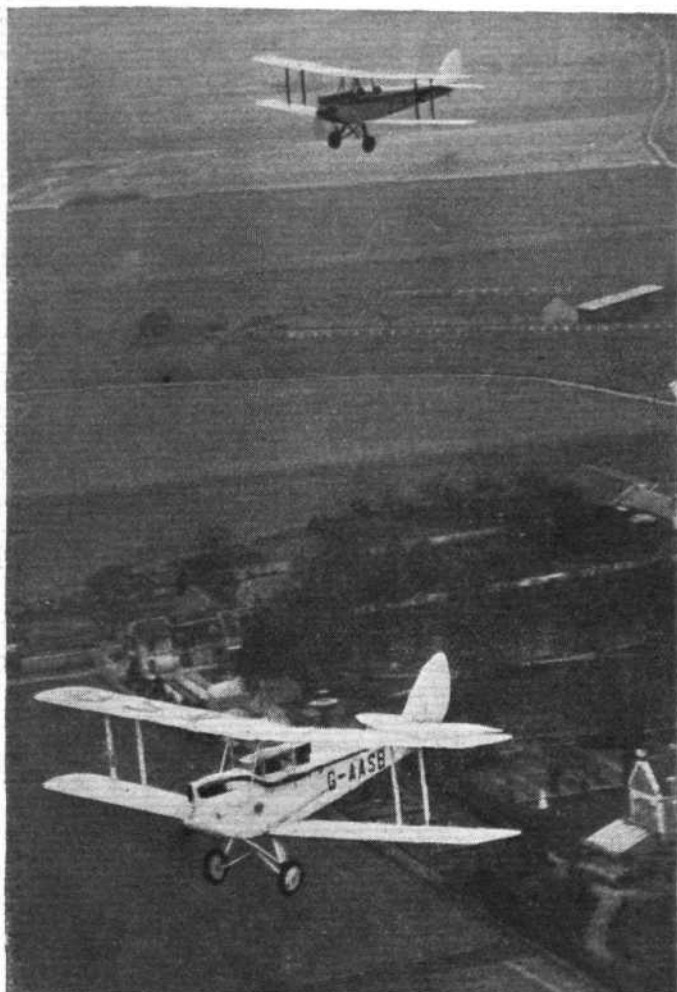
**BRISTOL and WESSEX Aero-plane Club.**—The Club's flying hours during the month of September total 169 hr. 30 min., made up as follows: Dual, 73 hr. 50 min.; solo, 54 hr. 20 min.; passenger flights, 32 hr. 25 min.; tests, 8 hr. 55 min. Five members obtained their "A" licences during this period.

The first club dance of the winter season will be held at the Grand Spa Hotel, Clifton, on October 31, the New Spa Hotel Dance Orchestra has been engaged and dancing will continue from 8.45 p.m. to 1.30 a.m. Tickets at 6s. each (including buffet) can be obtained from the Club Office, or will be posted on application by letter, in which case all applications should be accompanied by a remittance.



In the West Indies: Major A. A. Nathan's Gipsy Moth seaplane taking off at Port Maria, Jamaica.





**THE GIPSY MOTH IN FRANCE :** The machine at the top of our illustration is the Gipsy Moth belonging to the Comte de Beauregard, a prominent French Private Owner, while the lower machine is M. Eloff's Gipsy Coupe Moth. Both 'planes are flying over the little Village of Toussus-le-Noble, near the Farman Aerodrome.

**PHILLIPS and POWIS Aircraft**, of Reading, have, in the last six months, done 1168.5 hours flying; 24 pupils have gone solo, 17 people have taken out their licences. This represents an increase of 584.5 hours flying, or 100 per

cent. over the preceding similar periods. The average cost of training for licences is £28.

People who have passed through the School include Miss Gower, daughter of Sir Robert Gower, M.P., who went solo after 7.30 hours' instruction, Anis Pasha, late Under Secretary of State for Egypt, who has just gone solo.

Mr. L. Beardmore, the sailplane expert, has just passed his test for his ticket, and has bought a metal coupé Moth.

Two new instructors have joined the school, Flt.-Lt. R. Bateman, and Flt.-Lt. R. A. Seaton, both are C.F.S. men, and have spent most of their time in the service on instruction.

**CINQUE PORTS FLYING CLUB.**—The summer season finished on a high note on Monday, the 13th. The long-awaited clear sky appeared on Sunday, and advantage of this was taken to send Messrs. D. G. Ross and J. H. Searle on their height-tests for "A" licence. Both of them passed all flying tests satisfactorily. On the following day, Mr. R. T. Reynolds, of Tonbridge, who joined the club the beginning of last month, also passed his flying tests for "A" licence. The time of 17 hr. 15 min. flown by the three aircraft during the two days October 12 and 13 is extraordinarily good considering the short hours of daylight, and represents a mileage flown of over 1,250. This was largely helped out by Mr. Temple-Harris, who flew G-EBQE to Croydon and back on Monday.

On Monday night, the 13th, the club closed down for holidays, and reopened on the morning of Wednesday, the 22nd inst. The annual general meeting of the club will be held on Wednesday, November 12, at 114, High Street, Hythe, at 5 p.m.

**AN AIR RACE Round Spain.**—An air race around the entire Iberian Peninsula for a trophy, the Iberian Cup, is being organised by the Spanish Aeronautical Federation. It is not known yet whether airmen of other countries will be able to compete, except that Portuguese aviators are to be eligible and are expected to be well represented. The length of the course will be about 2,500 miles.

This scheme is part of an ambitious movement to popularise private flying in Spain. The Spanish Aeronautical Federation has altered its rules so that clubs, universities, workers' unions and other organisations may become affiliated. A great congress of all these bodies is to be held shortly, when arrangements will be made for the formation by each of a special flying section for which the Federation will provide lecturers and instructors on flying matters. The Federation's plan includes the construction of aerodromes at all the important and many of the lesser towns in the country where such facilities do not already exist.

There is great interest in flying matters in Spain. Only a few weeks ago, the Director-General of Communications announced that the commercial air services in Spain were to be improved and increased.



**SIDE BY SIDE SEATING :** The latest "Redwing" produced by the Robinson Aircraft Co. is similar in general construction to the first machine, but the engine is an Armstrong-Siddeley "Genet" for which a very neat cowling has been designed. An undercarriage of long stroke is provided so that landings are particularly smooth. (FLIGHT Photo.)



# GLIDING



**THE LEEDS** Gliding Club has had a very busy week. Mr. G. Jefferson, the Hon. Sec., writes:—"We have secured a good gliding site, complete with out-buildings and ample room to store the machine, and also very near the city. A machine has been purchased and will, we hope, be delivered very shortly.

"Mr. A. G. Wilson and the writer visited the Leicester and Rugby people on Sunday (19th), and were very interested in the Rugby club's Lowe-Wylde machine. Messrs. Hull and Jervis kindly demonstrated their Reynard craft, and Mr. Wilson (our instructor) made a very nice flight on the same and was pleased with the way it handled. We must thank the Leicester and Rugby people for their hospitality and ask them to remember, should they ever venture north, they will be made very welcome at Leeds.

"Last Wednesday we all visited the Aircraft Club, Harrogate, and our members were surprised when they saw how well the H.A.C. men have built their Dickson glider. It is a 'class' job, and a credit to them. Mr. Addyman gave us a short talk, which was greatly appreciated."

**MIDLAND** Gliding Club.—At the Club meeting on October 8, Mr. Fenwick presiding, Mr. F. J. Knight was unanimously elected hon. secretary, following the resignation of Mr. J. V. Rushton. The meeting also expressed its wish that Mr. Fenwick should continue to occupy the chair, and Mr. W. Hudson was elected assistant secretary. A squad of riggers, under the command of Mr. Bert Clarkson, was appointed, and other club duties were similarly allocated, including Mr. B. P. Littleford as publicity organiser.

It was decided to dismantle the club's glider for certain repairs, and Mr. Knight offered £5 towards the cost of the work. It was reported that the hangar on the Pattingham gliding field required certain repairs, and the ground staff were authorised to prepare an estimate of the cost.

**THE INTER-CLUB** Gliding Competitions organised by the British Gliding Association were held at Ditchling Beacon on Saturday and Sunday, October 18 and 19. Five clubs—London, Surrey, Portsmouth, Kent, and Channel—participated in inter-club team matches for primary training machines and intermediate type machines, and there were also individual duration contests on primary training machines and intermediate type machines. The weather was perfect, and there was a very big crowd on both days. About fifty flights were made and no damage of any description occurred.

The various competitions, and results, were as follows:—

Individual duration contest for primary training machines. Open to all members of affiliated clubs. Prize: silver cup presented by Cloucraft Glider Co., won by Capt. Stratton (Surrey Club), with 1:40 2/5 min.

Individual duration contest for intermediate type training machines. Open to all members of affiliated clubs. 1st prize: value £5 5s., presented by R.F.D. Co., won by R.

Mathison (London Club), with 4:37 3/5 min. 2nd prize launching rope, presented by Burley & Co.

Inter-club team match on primary type training machines. Teams of 3. Pilot's prize to go to the best flight in the winning team. 1st prize: Dope, presented by Titanine-Emallite Co., won by the Surrey Club, with 7:44 4/5 min. Pilot's prize: silver cigarette case, presented by Titanine Emallite Co., won by Capt. Stratton, 1:40 2/5 min.

Inter-club team match on intermediate type training machines. Teams of 3. 1st prize: Dope, presented by the Cellon Co., won by the London Club, with 12:42 min. Pilot's prize: silver tankard, presented by the Cellon Co., won by R. Mathison, with 4:37 3/5 min.

Individual duration contest regardless of the type of machine, but flown by a British pilot. 1st prize: Silver cigarette box, presented by Skinners, Ltd., won by R. Mathison, with 4:37 3/5 min. 2nd prize: silver tankard, presented by British Aircraft Co., won by R. Mole, with 2:53 1/5 min.

**NORTH KENT** Gliding Club is holding its opening meeting, at Joyce Green Aerodrome, Dartford, on November 1. Commencing at 12 noon, there will be demonstrations of gliding and stunt flying and joy rides by Surrey Flying Services. Mr. G. H. Lowe Wylde will also give a display on the club's machine.

**THE BRADFORD** Gliding Club held two flying meetings on October 18 and 19, at Apperley Bridge, near Bradford, when about 70 preliminary hops were made. The club has adopted the policy of gradual training, each member having two attempts in succession, these being practically slides, and if the pupil can balance the machine correctly he is launched about 4 ft. into the air on his next two efforts, the Chief Marshal setting the controls before each flight.

The club is fortunate in having as Chief Marshal Mr. H. Jones, who was on active service during the war as Flying Officer and Pilot Instructor, and also Mr. A. M. Verity, who is still on the active flying list of the R.A.F. reserve.

One of the lady members of the club, Miss R. Barnes, made her first flights on Saturday, and made two very good attempts.

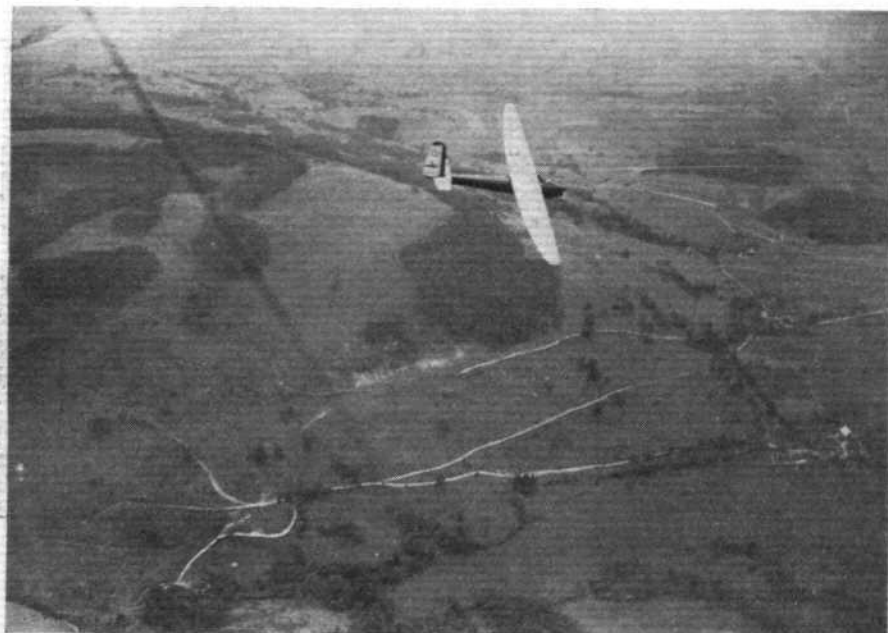
The club has opened a Constructional Section, and members are to commence the building of a pair of wings, under the very able tuition of Mr. H. Sutton, at whose workshop the club glider was constructed. The subscription for this Section only is half a guinea. Flying members pay one guinea entrance fee and one guinea subscription. This embraces all sections of the club.

Anyone desiring information, please write to Mr. S. Young, 17, Roslyn Place, Great Horton, Bradford.

**SCARBOROUGH'S** New Glider.—A two-seater dual-control glider acquired by the Scarborough Gliding Club was christened *The Scarborough* by the Mayoress (Miss L. Moore) of that town on October 10.

The glider, built by the "Segel Flugzeugbau, Kassel," and which has a span of 50 ft. and weighs 420 lb., was assembled in the ballroom of the Royal Hotel, and after the christening ceremony tea was served under its wings. Herr Magersuppe, the young German gliding expert, is to give instruction in soaring to the members of the club in this machine. He will also give several demonstrations in various parts of the country from time to time.

Demonstrations, in conjunction with the Scarborough Club and the Barrow-in-Furness Club, will be given on October 25 and 26, in the fields adjoining Bank House Moor. A further demonstration, in conjunction with the Accrington Gliding Club, will also take place on November 1 and 2, at Nick o'Pendle.



**Stark, on the Darmstadt glider. Snapped from an aeroplane whilst soaring over the western slope of the Wasserkuppe.**





# AIR TRANSPORT

## THE DEVELOPMENT OF CIVIL AVIATION AND NIGHT FLYING

By M. N. T. GUBBINS

[Major Gubbins is General Manager of Chance Bros. & Co., Ltd., Marine and Aerial Lighthouse Engineers and Constructors, Birmingham.—ED.]

**W**E have been following with great interest in the pages of your journal, the gradual education of the public in the development of civil aviation, but it appears to us that, although much has been written with regard to the necessity for night flying, little has yet been said as to the means for making this possible.

Night flying, and therefore the lighting of aerodromes and airways, is an essential part of the development of aviation as a whole, and we would venture to suggest that the public are ready to receive, through your pages, any information as to what has been done and what is going to be done in this respect on the great air routes of the Empire.

Outside official sources, we claim to be in closer touch with this problem than any other organisation, because our network of agents, all over the world, are supplying us with detailed information as to the requirements and experiences of their countries. As the only manufacturers in the world of every part of a lighthouse apparatus, we feel that the justness of this claim must be recognised.

The term "lighthouse," being so well known, is now commonly used in reference to an airway beacon or aerodrome location beacon; but for the light which illuminates the landing surface of an aerodrome, the more correct term is the floodlight, and here again we are the only manufacturers of the complete dioptric type flood light.

During 1930, two Chance 1,000-mm. floodlights have been installed at Baghdad and Basra, on the Cairo-Karachi section of the Indian air mail route. These floodlights are of a type which can also be used as beacons to indicate by

their revolving flashing lights, to the pilot 30 miles, or, say, 20 minutes' distant, the locality of the aerodrome. On his arrival above the aerodrome, their light is thrown down on the surface, which (in the recent words of a famous pilot) it illuminates as brightly as day for effecting a safe landing. Five Chance 500-mm. diameter floodlights are also now in course of construction for the route to India.

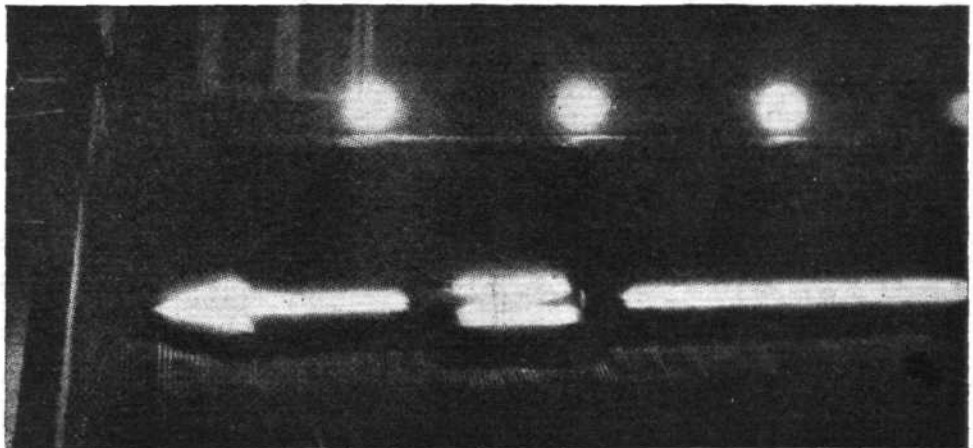
Examples of the interest and importance now attaching to aerial lighting are reaching us almost daily.

Civil aviation headquarters in India are considering the possibility of installing small portable beacons at railway stations on the route from Karachi to Delhi.

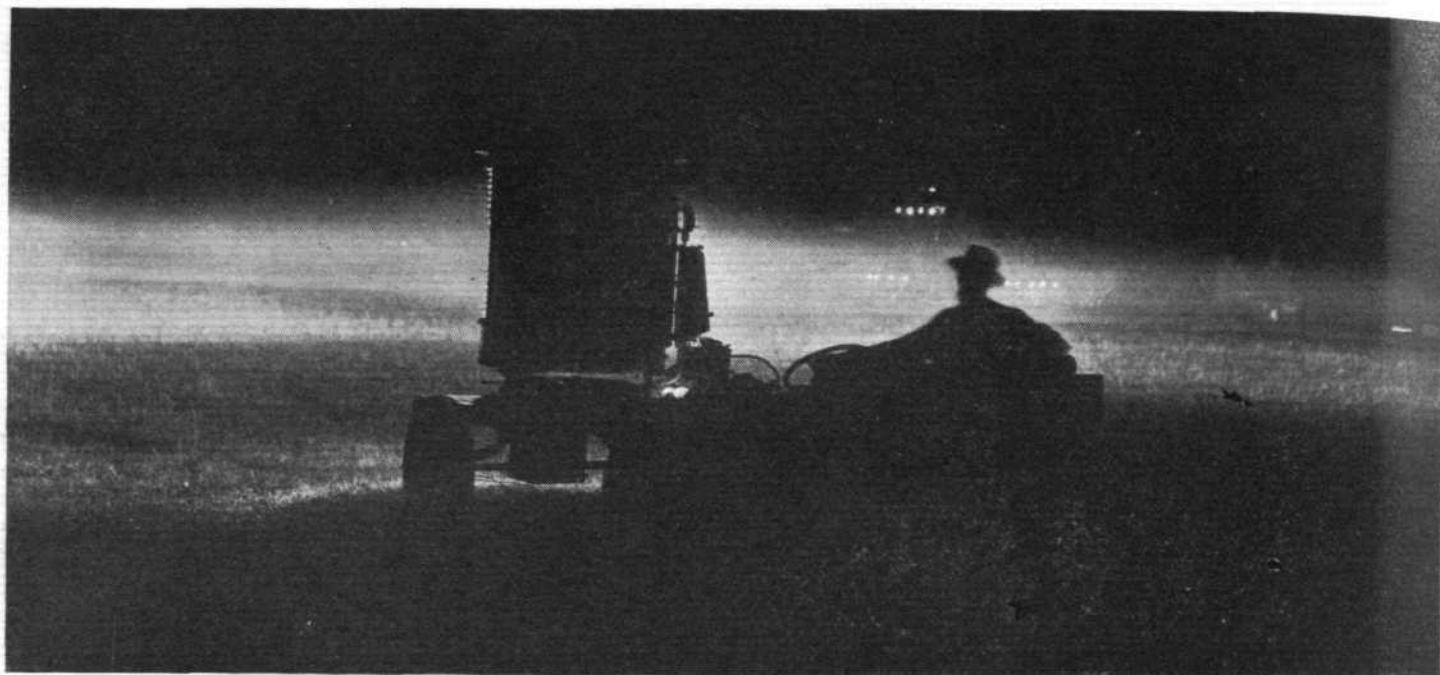
A representative of the Government of the Dutch East Indies was in this country during the summer, closely examining the British methods of lighting aerodromes and airways, with a view to the preparation of a scheme for lighting the chain of aerodromes in the Dutch East Indies on the route to Australia.

In Australia, there are already three Chance landing floodlights on the great route from west to east.

South Africa and Rhodesia, as a result of the recommendations of the survey party which traversed this route



**NIGHT FLYING IN AMERICA.** Above is one of the Neon "north" arrows on hangar roof at the Los Angeles airport. Below, the main runway "floodlit" at the same airport.



**NIGHT FLYING IN ENGLAND:** The Chance floodlight employed during the experimental night flying tests at Heston.

during the earlier part of this year, of which Capt. Tymms was the Air Ministry representative, are now asking for floodlights for Germiston (Johannesburg) and Salisbury aerodromes, and these floodlights are to be similar to those provided by the British Air Ministry for the Indian route.

They are, in addition, now asking for illuminated wind indicators and flashing boundary lights. An airway beacon will probably be installed north of Salisbury. It is probable that the aerodrome at Mbeya (Tanganyika) will also be provided with a floodlight.

Canada has been sorely tempted to follow American practices of lighting, but ever mindful of the Mother Country, she has been closely watching British methods, and before coming to any final decision as to types of apparatus, she has decided to try out British equipment. Two Chance 1,000-mm. floodlights are now in use at Winnipeg, and Canada has ordered the latest type of dioptric airway beacon

designed by the British Air Ministry, and also a Chance-type searchlight beacon, to try out, in comparison with the American type of searchlight.

The need for night flying is being realised more and more as the nation becomes more air-minded, and the natural corollary is an appreciation of the necessity for adequate lighting. We feel that we cannot do better than quote the words of the late Air Vice-Marshal Sir Sefton Brancker, whose loss to civil aviation is irreparable; he said to us, on one of his recent visits:—"Aerodromes at night must be made as light as day. That demand can be met by scientifically-designed apparatus."

In conclusion, we desire to add one word of congratulation to Mr. Norman and Mr. Muntz, directors of Airwork, Ltd., for their great enterprise in being the first to arrange a night-flying demonstration week at Heston, and to provide the necessary means of lighting for the purpose.

### British Air Mails

THE following figures issued by the Postmaster-General may be of interest to the general public. During the quarter ended September 30, 1930, 26,507 lb. of letter air mail were carried from this country as compared with 22,077 during the corresponding quarter of 1929, an increase of 20 per cent. The largest carryings to any one country were to India, for which the figures were 6,988 in the September quarter of 1929 and 7,712 in the September quarter of 1930, an increase of 10 per cent.

The traffic for the two quarters was divided as follows: Indian Air Service (including Egypt, Iraq, Palestine, etc.) (1929), 8,548 lb.; (1930), 11,547 lb. Iraq (air from Gaza) (1929), 3,430 lb.; (1930), no service. Australian Internal Service (1929), 967 lb.; (1930), 1,402 lb. South African Internal Service (1929), 357 lb.; (1930), 2,076 lb. Other extra-European destinations (1929), 1,256 lb.; (1930), 1,500 lb. Continental Air Services (1929), 7,519 lb.; (1930), 9,982 lb. Total all Services (1929), 22,077 lb.; (1930), 26,507 lb.

The Imperial air services continue to develop satisfactorily, the proportion of mails for Empire destinations amounting in the September quarter, 1930, to nearly one-half of the total mail carried.

On June 2, 1930, a uniform combined rate covering air fee and postage (4d. for the first ounce, and 3d. for each subsequent ounce) was introduced for all European destinations, and special blue air mail posting boxes were brought into use in London on June 23. These measures have been successful in attracting additional traffic, the air mail for European countries having increased by 33 per cent. as compared with the September quarter, 1929.

41,460 lb. of parcel air mail were carried to various European destinations as compared with 40,686 during the quarter ended September 30, 1929.

The total weight of air mail, letters and parcels, carried from this country during the September quarter of this year was 30½ tons as compared with 28 tons in the corresponding quarter of 1929.

The Postmaster-General also announces that a new edition of the Air Mail Leaflet giving particulars of the winter air mail services from this country is now available. It contains an inset showing details of the direct air mail service to India, and the leaflets distributed in the London Postal area will also contain an indicator showing the latest times of posting in the air mail letter box outside the G.P.O., London, for the various services. The latest times of posting in the Provinces can be ascertained locally.

The latest time of posting in the special air mail posting box outside the G.P.O., London, for the direct England-India air mail will continue to be 6 a.m. on Saturday mornings, and the mails will be due to arrive at Alexandria on the following Tuesday evening; at Gaza on Wednesday morning; at Baghdad on Wednesday evening; at Basra on Thursday morning; at Karachi on Saturday afternoon; and at Delhi on Sunday afternoon. The fees for this service, in addition to ordinary postage, are: To Egypt and Palestine, 2d. per half ounce; to Iraq, 3½d. per half ounce; to Persia, 5d. per half ounce; to Karachi (with onward transmission by ordinary route), 5d. per half ounce; and by air to Delhi, 7d. per half ounce.

Letters can be sent to all European countries to which an air service is advertised for an inclusive charge (including postage), of 4d. for the first ounce, and 3d. for each subsequent ounce. The public is reminded that money orders for payment in Egypt, Iraq and India can be advised abroad by the direct England-India air mail upon payment by the remitter of the minimum fee for an air mail letter addressed to the country of destination (2d., 3½d., or 5d. as the case may be) in addition to poundage at the ordinary rate for Imperial and foreign orders.

The Postmaster-General is informed by Imperial Airways, Ltd., that the charge, payable by the addressee, for the clearance of all air mail parcels for Paris through the French Customs and their subsequent delivery to the addressee is now 6 fr. 50 c. It is understood that all deliveries will be by express service.





## FORD AIRCRAFT FOR EUROPE

**A**MONG the aircraft exhibited at the Olympia Show last year was a large three-engined Ford all-metal monoplane, which attracted a good deal of attention. That machine, after the closing of Olympia, made a tour of several European countries, and ultimately was sold to the Czechoslovak air lines. The interest shown in last year's machine on the Continent has led the Ford company to believe that a good deal of business is to be done in certain European countries, and arrangements were made some time ago to bring two standard Ford types to this country for assembly, and then to send them on a tour of the Continent. The machines arrived at Ellesmere Port, on the Mersey, on October 16, and were towed by road to Hooton Park Aerodrome, where Mr. Dawson, chairman of the Comper Aircraft Co., had made all arrangements for erecting and testing the machines. By Saturday afternoon one of the machines was erected and wheeled out on the aerodrome. After some slight delay in starting one of the engines, due most probably to the presence of water in the ignition system after the transport across the Atlantic on the deck of the steamer, all three engines were started and run up, and some test flights were made.

On Monday this first machine, a type 4-AT-E 11-passenger machine, was flown to London. It had been the intention to land at Heston, but as the weather was thick and the pilot, Mr. Leroy Manning, did not know Heston very well, he decided to land at Northolt instead. This was done quite successfully in the dark, by the aid of the machine's own searchlights mounted in the leading edge of the wing.

The second machine, a somewhat larger one, type 5-AT-C, fitted with three Pratt and Whitney "Wasps," was assembled at Hooton later and flown to London. This machine, inci-



**THE AMERICAN WAY OF STARTING:** Three men swinging the inertia starter on the Ford monoplane, one holding the end of the starting handle and the other two "cranking." (FLIGHT Photo.)

dentally, is similar to that which some time ago established a world's speed record for useful load of 2,000 kg. on a 100-km. course with an average speed of 164 m.p.h. Normally this machine has a top speed of 152 m.p.h. and a cruising speed of 122 m.p.h. It was piloted, on the record-breaking flight, by Mr. Manning.

We had an opportunity to examine the machines at Hooton last Saturday, and it is hoped to give a detailed description of them in next week's issue of FLIGHT.



**THE FORD TYPE 4-AT-E:** Fitted with three Wright J.6 "Whirlwind" engines this machine carries 11 passengers and 2 pilots. Standing under the wings of the Ford are two Comper "Swifts," that on the left being the "Scorpion" version, while that on the right has a Pobjoy engine. (FLIGHT Photo.)

## BUSINESS MEN AND THE AIR MAIL

IT will be remembered that reference has recently been made in these columns to suggestions for speeding up our air mail services put forward by the Civil Aviation Section of the London Chamber of Commerce, whose views were communicated to the Air Ministry and the General Post Office.

The matter has now been taken a step further and the executive of the London Chamber, in support of the Aviation Section, have addressed letters, which we give below, to the secretaries of the two Government departments. It will be noted that a round table conference between representatives of the post office, the Air Ministry and the London Chamber is suggested.

Further developments will be awaited with interest not only by the business community but also by the general public.

To the Secretary,  
The General Post Office.

17th October, 1930.

SIR,—On consideration of your letter of the 8th August last, I was directed to say that the London Chamber is gratified with the assurance that the Postmaster-General is also of opinion that the full benefit of the high speed of air transmission can only be secured, so far as mails are concerned, when an extensive system of night air services is in operation, particularly within distances of about 1,000 miles from the starting point.

The Chamber has perused with interest the information contained in the Postmaster-General's letter regarding the poundage of air mail carried from Belgium and the amount of paid air mail from this country. It feels, however, that figures of air mail user to points so close as Belgium do, in fact, cast very little light on the probable user, if services were established as is suggested to points some 1,000 miles distant. It has to record its disappointment at being informed that all questions regarding the establishment and development of air services are primarily within the domain of the Air Ministry. As a matter of departmental convenience the Chamber has addressed its communications both to the Air Ministry and to the Postmaster-General. It fully appreciates that, in administrative and statutory matters concerning air, the Air Ministry is primarily responsible. It cannot, however, accept the view inherent in the Postmaster-General's letter, that he is not primarily responsible for initiating and pursuing such plans within the structure of Government itself as will lead to the full value of the speed which the air can offer being placed at the disposal of commerce and industry for the carriage of mail.

The Chamber would regret to have to believe that, recognising as he does the manner in which the full value of air service might be utilised, it is not open to the Postmaster-General to take such steps as may be necessary to keep the mail services abreast of modern developments.

The Chamber notes with interest the Postmaster-General's comments on the small proportion of first-class letter matter carried by the Indian mail. It has already had occasion to address communications to the Air Ministry and the Postmaster-General on the subject of the Indian air mail, and it cannot let the matter rest without pointing out that an air mail service, which does not take advantage of the speed which can be offered to the public and which runs only once a week, cannot hope to attract more than a small and unimportant portion of the communications passing.

The Chamber would have more confidence that the possibilities of air transport were being brought to the notice of the competent authority if it had the assurance that the Postmaster-General was impressing upon the Air Ministry the relative unimportance of the existing British air mail services and was pressing for a much more frequent and rapid service, even at the expense of some contribution from his own Department.

The Chamber would welcome discussion with the Postmaster-General upon the whole problem of the carriage of mails by air because it feels that, in this matter, Great Britain is falling far behind other nations, and that only a keen appreciation by the Postmaster-General of the possibilities of air transport, followed by resolute action on his part to bring its advantages within the reach of the foreign trade and commerce of Great Britain, is likely to lead to developments that a commercial community can regard with satisfaction.

### Dr. Whitehead Reid Killed

WE very deeply regret to record that Flight-Lieut. Edward Douglas Whitehead Reid, M.B., of No. 601 (County of London) (Bomber) Squadron, A.A.F., died in West Kent Hospital, on Monday, October 20, as the result of injuries sustained in a flying crash the day before. He had been taking Miss Irene Burnside, daughter of Canon W. F. Burnside, headmaster of St. Edmund's School, Canterbury, for a flight, and was noticed at 5.30 p.m., apparently trying to land in bad visibility at the village of Detling. The machine seems to have fouled a tree and then it crashed. Miss Burnside was killed outright, and Dr. Reid was taken to hospital with a fractured skull and other injuries, from which he died next day. Dr. Reid's flying career was described at some length in the issue of FLIGHT of June 16, 1927. He picked up his knowledge of the pilot's art while acting as medical officer to a school of artillery observation in Egypt during the war. On July 27, 1920, he took R.Ae.C. certificate No. 7883. Two years later he became a private owner, the first private owner in Great Britain after the war. He started with two aeroplanes, an Avro and a S.E.5, each driven by a 90-h.p. Renault, which were housed on a disused aerodrome near his home at Canterbury. He kept an excellent mechanic to attend to the engines, and it was that mechanic's boast that his master never had a forced landing. The doctor was too busy a man himself to attend to the engines as aero engines need to be attended to.

The Chamber is entirely at the disposal of the Postmaster-General to meet him on any occasion which he may appoint, and it ventures to suggest that in view of the reference to the authority of the Air Ministry contained in his letter, it would advance this subject and be of value to all concerned if representatives of the Air Ministry were joined in that discussion.—Yours faithfully,

(Signed) A. DE V. LEIGH,  
Secretary.

17th October, 1930.

To the Secretary, The Air Ministry.

SIR,—I am directed to refer to your letter of the 16th June, in which you communicate the views of the Air Council upon the Civil Aviation Section's letter of the 15th May.

The London Chamber is gratified to observe that the Air Council agrees that this country should not be backward in the establishment and development of night air services, and notes with some regret the limiting factors which appear to operate. The Chamber doubts, however, whether these considerations are, in fact, important. Its letter of the 15th May dealt primarily with air mails within a radius of 1,000 miles from London, and it is evident that on the routes indicated the amount of night flying, if any, in the British Isles must be of small account. The Chamber is aware of the facilities for night flying on the Continent, and believes that to enable British mail services, say, from Croydon, to take full advantage of Continental facilities, a relatively insignificant expenditure on the part of the Air Ministry would be required.

It regrets to observe, in pursuing this subject of non-stop night mails, that the Air Ministry and the Postmaster-General are inclined to place the onus each upon the other. The London Chamber is not concerned with the demarcation of departmental authority, but it is deeply concerned with the fact that Great Britain is falling behind in the matter of the establishment of speedy air mail services.

It, therefore, holds the view, which I am instructed to convey to you, that if there is, in fact, a division of authority in these matters, or if the onus of initiative in pursuing the quicker development of the quicker carriage of mails has not been defined, this is a matter for Government as a body to settle and should not serve to retard the modernisation of British Mail Services.

The Chamber has been informed by the Postmaster-General that he would be prepared to discuss this matter, and feels that such discussion must be unfruitful of results unless the Air Ministry is joined. It suggests therefore that, when the proposed discussion between the Postmaster-General and the London Chamber of Commerce takes place, it should be attended also by representatives of the Air Ministry so that the representatives of Government jointly or severally may be in a position to deal with the issues which the London Chamber will then raise.

I am directed to state that the London Chamber is fully appreciative of all the Air Ministry has done in the matter of Civil Aviation, and recognises that some substantial progress has been made, but it is anxious that Great Britain shall have the use of commercial machinery at least as efficient as that which is already possessed by its competitors. Moreover, it believes that satisfactory progress will not be made until the Post Office accepts financial responsibility for the provision of rapid air mail services to important commercial centres without regard to the poundage of mail that may travel by these services at the outset.

The Chamber has remarked with some concern the great advances in the carriage of mails by air which have been made by all the great industrial countries with which Great Britain is in competition, and it feels that the most interesting example of what has been done is to be found in the United States of America. There, so far back as 1925, a Committee of Congress recognising the economic value of air mail, laid upon the Postmaster-General the onus of organising services, and empowered him to make the necessary contracts. Moreover, after less than three years' experience of internal air mails, the Postmaster-General was empowered by Act of Congress to enter into contracts for the carriage by air of mail to foreign countries. In the result, regular air mail services have now placed the American manufacturer in rapid touch with all the valuable markets of South America.

The Chamber would be glad to hear if the Air Council would be prepared to participate in a round-table discussion of this subject.—Yours faithfully,

(Signed) A. DE V. LEIGH,  
Secretary.

In his S.E.5, Dr. Whitehead Reid took part in the first race for the Grosvenor Cup, in 1923, but retired at Birmingham as he could not get enough speed out of his machine. Since then he has flown to almost every air meeting of importance, and has often taken part in races. He joined the County of London Bomber Squadron as medical officer, but in practice he was one of the most energetic pilots in the squadron, and was sometimes mistaken for second in command. He was, in fact, a very skilful and a very cautious pilot, who flew because he loved flying. It is proof of his eminence as a doctor that he attended the Archbishop of Canterbury when His Grace was taken ill soon after his enthronement. Dr. Whitehead Reid was very popular with all who met him, and his loss will be very widely felt.

### The Napier "Rapier"

The new 16-cylinder air-cooled Napier engine, which created such great interest on its first appearance at this year's Air Display, has, according to the British Air Ministry's latest list of new-type aircraft, received the official name of "Rapier." The chief advantage of this engine—which was illustrated in our issue for June 20 last—is its very small frontal area.

### Saro "Windhover's" Test Flight

THE Saro "Windhover" three-engined all-metal flying-boat, built by Saunders Roe, Ltd., of Cowes, made a successful test flight late on October 17.



## CORRESPONDENCE

[The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.]

### ROLLS-ROYCE ENGINES FOR AMERICA

[2339] We note in the FLIGHT of October 3, 1930, that the following statement appears:—

"Three Rolls-Royce 825-h.p. 'H'-type aero engines have been ordered by the U.S. Government. It was this type of engine, it will be remembered, that was fitted in the Supermarine Schneider Trophy machines of last year."

We would point out that while the "R"-type engine fitted in the Supermarine Schneider Trophy machine was developed from the "H" engine, it was by no means the same type. The "R"-type engine was similar to the "H" in that it was of the same bore and stroke. The reduction gear and supercharger were, however, of an entirely different design in the "R" from that which is standardised in the "H."

The type of engine supplied to the American Government is, as stated, the standard Rolls-Royce 825-h.p. "H" type, not the "R" engine as fitted in the Supermarine Schneider Trophy machine. We should be obliged if you would publish a correction to this effect.

For ROLLS-ROYCE, LTD.,

L. F. R. FELL (Lieutenant-Colonel).

### "AS OTHERS SEE US"

[2340] May I endorse all the views expressed by your correspondent "Chutin," No. 2332, in this week's issue of FLIGHT.

I have had the great pleasure of reading "Good Old FLIGHT" for 10 years, and read odd copies during the Great War.

I, like your correspondent, studied the war in the air with enthusiasm, and made several scale models of fighting aircraft, including the early B.E.2c, the Sopwith "Camel," and S.E. 5A.

My main object in craving your valuable space is with regard to your correspondent's desire for more of the squadrons and "the Service."

I, too, would love to have plenty of this, and your most interesting article on No. 43 F6 Squadron, in this week's issue, made my "mouth water" for more, and yet more.

Might I therefore make a suggestion that we have, at regular intervals, such fine illustrated articles as this one on each squadron of the R.A.F., including the Fleet Air Arm?

Living within "air" distance of Tangmere, I often see No. 43 F.S. Siskins passing over my home, and also being near Gosport, I see some magnificent aerobatic displays on Fairey Flycatchers, by Fleet Air Arm pilots.

I close, like your correspondent, in thanking you for much past pleasure I have derived from reading FLIGHT, and wish you and your staff the best of luck and prosperity in the future.

NORMAN E. NEVILLE

Fareham, Hants.

September 21, 1930.

### CLASSIFICATION

[2341] The writer of your Croydon Weekly notes, by his use of the term "Air-Scared," has designated one more section of the community, and I hope he will develop still further his system of classification of the public according to their aeronautical experience, for the following reason.

From the first I was a regular and enthusiastic attendant at Hendon and Brooklands (Public Enclosure only), and the feats of Messrs. Hucks, Manton, Desoutter, Gates, etc., etc., took up most of my Saturday afternoons and Sundays in 1912-1914. Between 1914 and 1926, by reason of location, my interest in aviation was limited to the pages of FLIGHT, but returning to the south of England in 1927, my son and I became frequent visitors to Croydon Aerodrome (public enclosure, roof of hotel, and occasional conducted tours round the hangars).

Up to this time, I suppose we ranked as air-scared, accepting your correspondent's nomenclature, but by some joy-flips in Avro 504's and Desoutters, I understand we got our stripes and became "Air-Minded."

This summer, being air-minded, we went to Cologne by Imperial Airways, then to Frankfurt by Deutsche Luft Hansa,

had a week at the Wasserkuppe Competitions, and returned by Imperial Airways. By this great adventure I gather we qualified as "What-Nots" (see Croydon Weekly Notes, July 25), being neither fat and prosperous financiers, nor American tourists.

What I would like your correspondent to tell us now is—What is the next step? Is there any hope of promotion for me, or do I remain a What-Not for the rest of my life?

J. B. PALMER

Cheam, Surrey,  
September 23, 1930.

### BRISTOL AIRPORT AND JOY-RIDING

[2342] The issue of FLIGHT on October 3 contains a statement to the effect that the Cornwall Aviation Co., Ltd., have been given the opportunity of moving their headquarters to Bristol Airport, operating a taxi service, servicing of aircraft, and practically the sole joy-riding rights of the aerodrome.

While the first part of this statement is correct in so far as negotiations have been proceeding between the Bristol Corporation and the Company for accommodation at the Bristol Airport, there is no question whatever of the Cornwall Aviation Company being given the "sole joy-riding" rights of the aerodrome. The granting of any form of monopoly is directly opposed to the policy laid down by the Corporation for the Airport.

The operation of an air taxi service at Bristol has been under discussion between the Bristol Corporation and several aircraft operating companies, one of which was the Cornwall Aviation Company, but up to the present no settlement has been reached, and the question is still open.

The servicing of aircraft is now being carried out by Messrs. Airwork, Ltd., who have opened a branch at the Bristol Airport.

L. WINTERS,

Manager, Bristol Airport

Bristol.

October, 1930.

### THE R.F.D. GLIDER

[2343] It is most interesting to me, after having periodically purchased FLIGHT since the first number was issued, to find you publishing details of the grand sport of gliding. A course of gliding is certainly the quickest method of learning to fly, especially as we have such airworthy machines as the R.F.D., of which the Nottingham Club is a proud owner.

I would like to emphasise that this primary glider has been shot off no less than 300 times at the hands of various members, both male and female, without putting the glider out of action on more than three occasions (excepting the first unfortunate day), and then not necessarily for more than an hour before it has been in the air again.

The layout of this machine is proved particularly interesting in the fact that on Sunday, September 21, finding it a very gusty day, I decided on my second flip to keeping as close to the grass tips as possible. I gave the order to walk, run and release, but went up like an arrow to 50 ft., for my elevator did not answer, so with my belt loose, which is my custom, I thrust my body forward and brought her level. I then noticed my elevator control wire had got off the front pulley and jammed tightly in the bracket, only to remain aloft keeping her at a hovering angle by supporting my body with one hand on the nose for a period of not less than 20 seconds, then gradually bringing her down by this method, side-slipping a little each way until the ground was touched lightly and on an even keel, only 15 yards from where I started.

I am confident that only a glider that had been built to correct aerodynamic details would have answered to bodily movements so sensitively.

May I offer my congratulations to the R.F.D. through your columns?

H. A. SEARBY

Carlton, Notts.

September 29, 1930.

# AIRISMS FROM THE FOUR WINDS

## "Miss Columbia" to Fly Home

CAPT. ERROLL BOYD and Lieut. H. Cannon, who recently flew from Canada to England in the Atlantic "veteran" *Miss Columbia*, are planning to make the return journey from east to west early next month. They hope to start from Baldonnel, Ireland, and follow the steamship route to Newfoundland or Nova Scotia. If they succeed this will be the third time the Bellanca monoplane *Miss Columbia*—which is five years old—has crossed the Atlantic.

## A Go-Easy Flight to Australia

ON October 16, Mr. Oscar Garden, a New Zealander, left Croydon in his "Gipsy Moth," *Kia Ora*, for Australia, in easy stages. Owing to bad weather conditions he had to land in a field between Ashford and Folkestone, but was able to proceed later to Lympe. He resumed his journey the following day.

## Mrs. Silver Reaches Kenya

MRS. HELEN SILVER, who, accompanied by Capt. Cameron, left Heston on October 3, in a D.H. metal "Moth," to fly to Kenya, arrived at Nairobi on October 20.

## Airwomen Fly Across America

Two airwomen have just succeeded in being the first of their sex to make the trans-continental flight in either direction. One, Mrs. Keith Miller (Great Britain), flew from New York to Los Angeles (on October 17) in 25 hr. 44 min. The other, Miss Laura Ingalls (U.S.A.), flew in the reverse direction, from Pacific coast to New York, and did it in 24 hr. 5 min.

## British Fleet to Abyssinia

MR. J. CLARK left Croydon on October 18 for Addis Abeba, Abyssinia, and after halting at Le Bourget, proceeded to Rome and Athens.

## Projected Atlantic Flight of Do. X

THE Dornier "Flying Ship" Do. X is at present being prepared at Friedrichshafen for a flight across the Atlantic. The machine, which originally was fitted with "Jupiter" engines, has now been re-equipped with 12 Curtiss "Conquerors." It is, perhaps, significant that a water-cooled type of engine has now been chosen, and may indicate some trouble in cooling the air-cooled pusher engines. The "Conqueror" is a 12-cylinder vee engine, and develops a normal power of 600 b.h.p. at 2,400 r.p.m. Thus, with the new engines the Do. X will have some 7,200 b.h.p. as compared with the 6,000 b.h.p. of the air-cooled power plants.

It is likely that the machine may visit England during the trip, as the present intention is for the Do. X to fly first to some North Sea port, possibly Hamburg, and thence to a shot, in Southampton Water. From there the machine

will probably visit a French port, and then fly to Lisbon, whence the actual Atlantic crossing will start. The route will lie via the Azores and Bermuda, and it is intended to carry a certain quantity of mails. A charge of 6 marks for a letter and 4 marks for a post card will be made, and the mails will be stamped "First oversea flight Europe-America of the Flying Ship Do. X." The actual start from Lisbon is likely to take place early in November.

## Junkers Altitude Aircraft

THE Junkers Works of Dessau have asked us to correct certain wild statements in the general press concerning a new aircraft which has been reported to be under construction and designed to fly at fantastic speeds at enormous altitudes. The facts are that the Junkers Works have for about a year been engaged in research into the possibilities of producing an aircraft with a somewhat special supercharger which would restore ground conditions in the engine at considerable heights. The work is being undertaken in close collaboration with the Deutschen Versuchsanstalt für Luftfahrt, and apart from the special supercharger for the engine, the problems of providing an airtight cabin for the occupants are being investigated. Of producing a machine which will penetrate to the upper strata of the atmosphere there is, of course, no question at the moment, although this is certainly a possible future development.

## The U.S. Airship "Akron"

A REUTER message says that as the U.S. Navy airship *Akron* is to be inflated with helium, the engines will be housed inside the hull, and that they will be fitted with swivelling propellers, which can drive vertically up or down as well as ahead or astern.

## British Aero Engine's Success

IN a military competition for single-seater fighting 'planes, organised by the Rumanian Government, and in which competed many well-known foreign manufacturers of aeroplanes and aero-engines, the latest Fokker D.XVI fighter, equipped with a British Armstrong-Siddeley "Jaguar" engine, has achieved a brilliant success. The Rumanian Government has now issued an official statement in which the Fokker D.XVI-Jaguar is declared to be winner of the competition. The very extensive tests, taking up several weeks, put the most severe strain on aeroplanes and engines, and the results prove that the British aero-engine fitted in the Fokker fighter was far superior to any other competitor. The Fokker D.XVI-Jaguar was flown by 1st Flt-Lt. Yonkheer Sandberg, of the Dutch Military Aviation Service.



**READY FOR LAUNCHING:** The Blackburn "Sydney" on the slipway at Brough. Fitted with three Rolls-Royce "F" type engines, this machine is an Open Sea Reconnaissance flying boat and the first monoplane of this type to be produced in England. Engineers can get to the engines from the hull through the streamline structure which contains the petrol tanks. A description of this machine was published in our issue of September 5, 1930. (FLIGHT Photo.)



**Dr. Eckener in an Aeroplane**

AFTER attending the funeral of the R 101 victims, Dr. Eckener and Capt. von Schiller returned to the Continent in a Desoutter aeroplane. On his return to Friedrichshafen, Dr. Eckener wrote to Mr. Desoutter, saying:—

"I am just writing to tell you that Capt. von Schiller and I had a very pleasant flight in your enclosed cabin machine from London to Flushing. We made excellent time and were able to catch the night express for Friedrichshafen, which saved me a great deal of inconvenience. I am always journeying in the *Graf Zeppelin* and do not often have an opportunity of flying in an aeroplane. Your machine created a very favourable impression on me. It is comfortable to sit in and one has an excellent view."

**Fatal Accident to Flight-Lieut. O. E. Worsley**

It was a motor accident, not an aeroplane crash, which caused the death of Flight-Lieut. Worsley, and so robbed the Royal Air Force of one of its most skilful pilots. The accident occurred on Saturday, October 18, on the Bath Road near Slough. Flight-Lieut. Worsley will always be remembered for the wonderful skill he displayed in flying a Supermarine-Napier S 5 in the Schneider Cup race at Venice in 1927. The engine was ungeared, and Worsley was not expected to win unless both the geared engines fell out. This happened to the machine flown by Flight-Lieut. Kinkhead, but Flight-Lieut. Webster kept on and won the race. Worsley was second. The way in which he passed the Italian pilot Guazzetti while turning the northern pylon will always be remembered by those who saw it. The Macchi turned suddenly and shot up high. Worsley held his machine low and made a gradual turn. When both had straightened out the blue monoplane was seen to have a decisive lead of the red one. Lately Worsley has commanded a flight of No. 29 Fighter Squadron, and took part in the defence of Cranwell in the recent air exercises.

He was born at Kensington in 1898, joined the R.N.A.S. in 1917, and saw war service at Alexandria in 1918.

**Central Flying School Dinner**

It is proposed to hold an informal reunion dinner of past and present members of the staff of the Central Flying School at Jues', Jermyn Street, at 7.15 for 7.45, on November 14. The cost of the dinner will be 10s. 6d. exclusive of wines. Dress: evening dress with miniatures.

In view of the impossibility of circularising all those officers who have served on the staff, it would be of great assistance if members would bring this announcement to the

notice of any other past members with whom they may be in touch. Will those intending to be present advise Flight-Lieut. C. Clarkson, 27, Holland Street, Kensington, W.8, before November 11.

**The London Chamber of Commerce, Aviation Section**

At a meeting of the Civil Aviation Section of the London Chamber of Commerce held on October 9, Colonel the Master of Sempill was elected to succeed Sir Harry Brittain as Chairman of the Section for the ensuing year, whilst Mr. Alan Butler and Sir Robert McLean were elected Deputy-Chairmen.

**Breda Brevities**

In addition to winning the Circuit of Italy, Breda machines have added further successes. At the Belgian Aviation Meeting at St. Hubert last September, a Breda "15," piloted by the Belgian pilot Jos. Bossijns, won the Centenary Cup for touring machines. Also, on October 5, at Taliedo (Milan), Meeting which consisted of a speed and landing contest for touring 'planes, five Breda "15" and "15.S" machines were entered; all completed the course and secured the first four places in the competition. First place was won by Geramia Meleri on a "15 S." The Breda Company has also won the Cavara Cup offered by the *Corriere della Sera* for the best all-round touring 'plane. Finally, the Italian Government, in connection with the Coronation of the new Emperor of Ethiopia, has offered the latter a Breda "15," which has already been dispatched to Addis Abeba.

**"As Easy as A.B.C."**

BRITISH aero engines fitted in foreign aircraft are assisting in the capture of world's aviation records more and more nowadays. As a recent example we might mention the records recently established with a Peyret-Mauboussin single-seater light monoplane, which was fitted with the 35-40 h.p. A.B.C. "Scorpion II" engine. This machine, on September 12, piloted by the French pilot Fauvel, captured two world's records for light 'planes (Class C, category IV—machines under 200 kg. weight)—distance (closed circuit) and duration. On this occasion Fauvel, flying over the Le Bourget-Vauciennes-Le Bourget circuit, covered 1,258 km. in 12 hr. 3 min. It may be added that this same combination secured two other records in the same class last year, viz., altitude (5,193 m.), and distance, in straight line (852 km.). Four records are thus held, and, incidentally, a fifth, that for speed, was also claimed by the Mauboussin-A.B.C. until quite recently.



**AN INTERESTING EXPERIMENT:** The Focke-Wulf Co. of Bremen recently completed a second "Ente" or "tail-first" machine, which has now passed its type tests and is said to fulfil all the claims made for it. With the tail first arrangement the machine is made proof against stalling and spinning, while the general arrangement is such that the machine cannot be turned over on the ground, so that the wheel brakes may be applied with full force.

# THE R 101 ENQUIRY

## Constitution of Court

IT was announced at 10, Downing Street, on Wednesday evening last, that the public enquiry into the cause of the loss of R 101 will be conducted by a Court established under the Air Navigation Act (Investigation of Accidents), with full powers to compel the presence of witnesses and the production of evidence. The Court will consist of one person, but two Assessors will sit with the Court. The following gentlemen have been asked to give their services and have accepted:—

The Court: Sir John Simon.

Assessors: Lieut.-Colonel Moore Brabazon;

Prof. C. E. Inglis.

The Assessors have been chosen as having some knowledge of the subject, and as being able to put specific questions to witnesses. They will be at liberty either to sign the Court's report or to make their own report.

Lieut.-Colonel Moore Brabazon is well known to all readers of FLIGHT. Prof. Inglis is Professor of Mechanism and Applied Mechanics at Cambridge University.

The Court will announce who will be Registrar, and when and where the Court will sit. It is understood that the first sitting will be held early next week.

This is the third Court of the kind to be instituted under the Air Navigation Act. A Court has been preferred to an Enquiry, because the latter would not have power to summon witnesses and call for evidence. The technical enquiry already held on the scene of the accident will presumably present its conclusions as evidence before Sir John Simon. This Court will confine its attention to trying to discover why R 101 came to grief. It will present its report to the Government, with whom it rests to decide upon the future airship policy.



## CROYDON WEEKLY NOTES

IN Europe's most primitive country, Andorra, the sturdy hillsmen have but one way of measuring distance. Miles or kilometres mean nothing to them, but the very dullest knows how many hours it takes to get from Las Escaldas to Solden, which is surely all that matters. Yet we, in our intelligent way, still think of Australia as being some ten or eleven thousand miles distant. Kingsford-Smith by his brilliant flight has shown that it need only be ten days away. And he has proved it single-handed, in his little Avian, with the most sketchy of ground organisation. Eventually we shall have an air mail service in that direction with depots and sub-depots, air ports and emergency landing grounds along the whole route. And when that service is organised may those who run it read in their history books of Kingsford-Smith's solo effort and learn thereby what can be done. Another brilliant and equally lone flight very recently, has shown South Africa to be but eight days distant. I doubt that we shall be disappointed if we expect our letters to take no longer when the Cape-Cairo service opens.

Mr. J. J. Flynn had an extraordinary experience last Saturday, when returning from Paris after dark. Not only did his wireless peter out but his dashboard lights failed as he ran into thick cloud at fifteen hundred feet. With the responsibility of his six passengers' lives on him and his petrol supply running short, he had reason to be scared. But Shades of Martlesham! that was nothing. Of course, "Paddy" pulled it off and the Control Tower breathed again. It would appear then that not only must our pilots be trained to fly by their instruments but with even those helps blanked out. That is "blind" flying with a vengeance.

Croydon was delighted to see Jack Matthews back on Saturday morning. As we sat round him in the Aerodrome Hotel, it seemed like a page from one of Conrad's novels come to life. He is surely one of the luckiest men alive to have pulled through those terrible experiences in the jungle where he was lost with Hook on their ill-fated attempt to fly to Australia. Every element was against them, torrential rain, flooded rivers turned to raging torrents, bamboo thickets so closely planted as to be quite impassable, and, lastly, their own failing strength unsupported by any food. It is not generally known that at the beginning of their flight they took a straight course from Marseilles to Catania over six hundred miles of open water and that their next stage was a further four hundred and fifty miles of sea to Bengazi. Yes, we were certainly glad to see Jack Matthews back, and we hope that he will soon find the work he is looking for.



### Loss of R 101

THE municipality of Allonne has presented the piece of ground on which R 101 crashed to the British nation in perpetuity. The Cabinet of France has authorised Sir Laurent Eynac to apply for parliamentary sanction to erect a memorial on the site of the disaster. Every Briton must be deeply touched by these repeated and extraordinarily graceful acts of sympathy by the French. The Sheffield firm of Thomas W. Ward, Ltd., has been given a contract to remove the wreckage. It will all be converted to scrap, and none is to be kept as souvenirs. Sir Maurice Lippens,

The 547 passengers who passed through Croydon last week included His Excellency M. de Fleurieu, the French Ambassador, who returned to London by Air Union on Thursday.

On the following day, the Imperial Airway "Silver Wing" machine, G-EBOZ, put down at Beauvais to pick up the remaining survivors of the R 101 disaster. It was a pathetic sight to see them arrive at Croydon still in bandages. After examination by a R.A.F. doctor an ambulance took them away.

There have been no real departures by air to Australia this week but large packing cases are leaving the Desoutter factory at Croydon for that destination. Apparently these contain Desoutter Mark II machines choosing a more conventional method of approach.

A new and interesting association called the "Comrades of the Royal Air Force" has recently been formed, with the object of bringing together past and present officers and men of the R.A.F., R.F.C., and R.N.A.S. Since Air Commodore Samson is connected with it, it is likely to be a "live" affair, and a branch at Croydon aerodrome would be one of the liveliest. In order to get this moving, it is proposed to form a strong committee. Those interested would be put wise to the big idea if they approached Capt. "Bill" Lawford. It is certainly time that something of this kind was done and since most people here would be eligible it seems that a very big branch could be formed.

Personal Flying Services, Ltd., the new air transport company, which was so recently started at Croydon, has got quickly to work. On Saturday, the 18th, Maj. Clark their chief pilot, departed for Abyssinia in the firm's Junkers. It is understood that the job is a newspaper one in connection with King Ras-Tafari's coronation. Personal Flying Services are also acting as European agents for the Sikorsky amphibian, and the first of these interesting machines to be imported from America arrived here last Friday. It is a single-engined monoplane with an underslung hull. The accommodation is for four passengers, pilot and mechanic. The tail unit is mounted at the end of booms which extend back from the hull and main plane. Like the Loening amphibian, its American rival, there is nothing conventional about the design. Before passing an opinion on it, we would like to watch its behaviour in a sea and compare it with such machines as Saunders-Roe are now building in England.

In addition to the 547 passengers mentioned above, Croydon air port has also handled 47 tons of freight during the week.

M. L.

G.C.V.O., Belgian Minister of Communications, has written to the Master of Sempill expressing the sympathy of Belgian aviation over the loss of R 101. In the course of his letter the Minister wrote:—"The whole Belgian nation realises and appreciates the happy relations which existed between Lord Thomson . . . and the Aviation Department of the Ministry of Transport and Communications. Also there is hardly a Belgian pilot who does not grieve deeply at the loss of Sir Sefton Brancker . . . His untimely death is regretted by all who knew him, but by none more than those connected with Belgian aviation."



# THE GROWTH OF AVIATION

By C. R. FAIREY, M.B.E., F.R.Ae.S.

(Concluded from p. 1151)

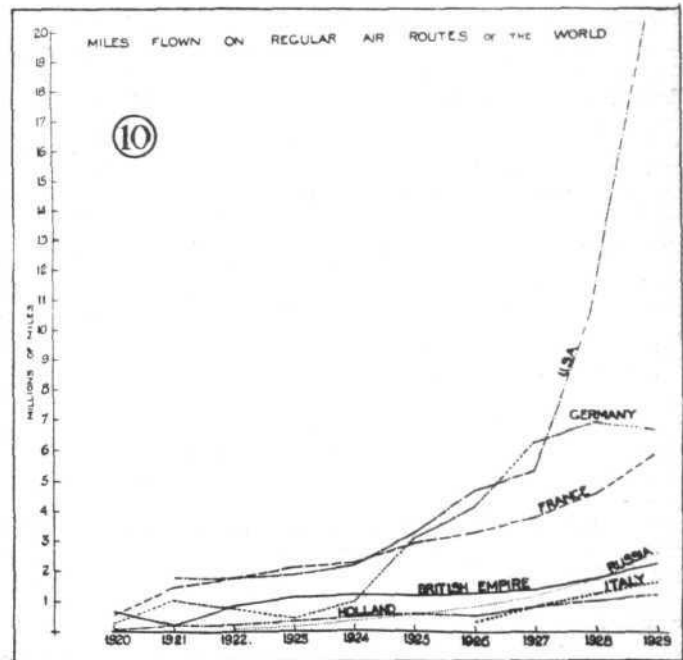
LET us now consider the world total of which these three countries form, of course, by far the greater proportion. Statistics for other countries have a small influence on the world totals, but one other part of the British Empire, that is to say, South Africa, is only just starting and may be expected to show equal development to other countries having similar conditions.

In the world total curve submitted, I would like to explain that I have assumed no private flying whatever in countries other than the British Empire and the United States, and that including, of course, the large figure for the United States already considered, the total reached is made up of 87 per cent. direct data, the remaining percentage only being estimate, even including the 25 million miles of private American flying already mentioned. In fact, the only home-made estimate in this curve is the figure of 750,000 miles for British private flying.

This curve of world total shows the same general shape as the American, Canadian and Australian curves and is, of course, very much influenced by the fact that they make up the greater proportion of it, but both the total and the regular air routes of the world show a gratifying regular expansion and an increasing rate of growth.

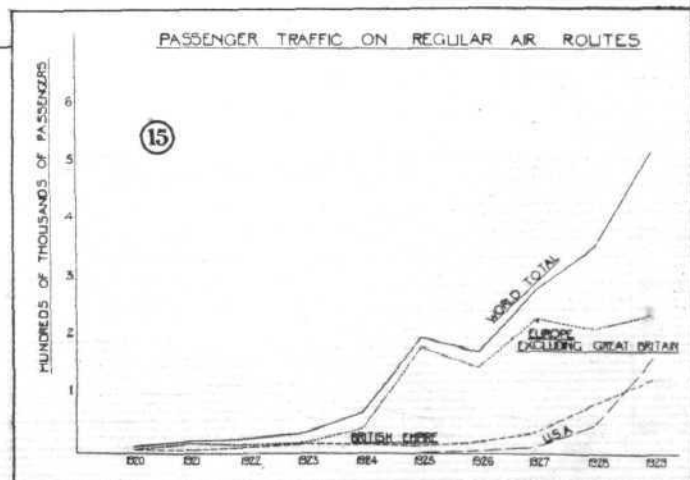
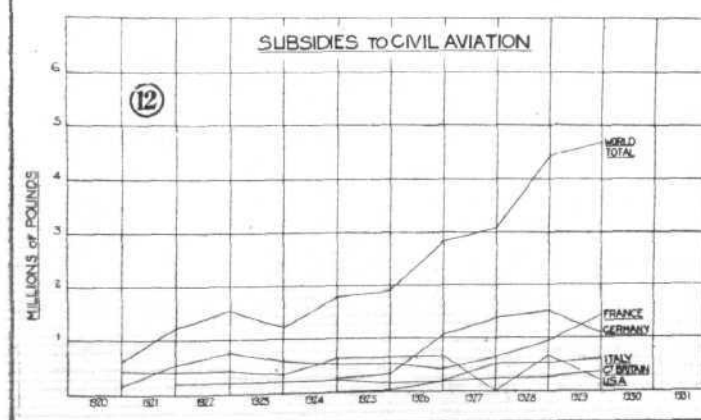
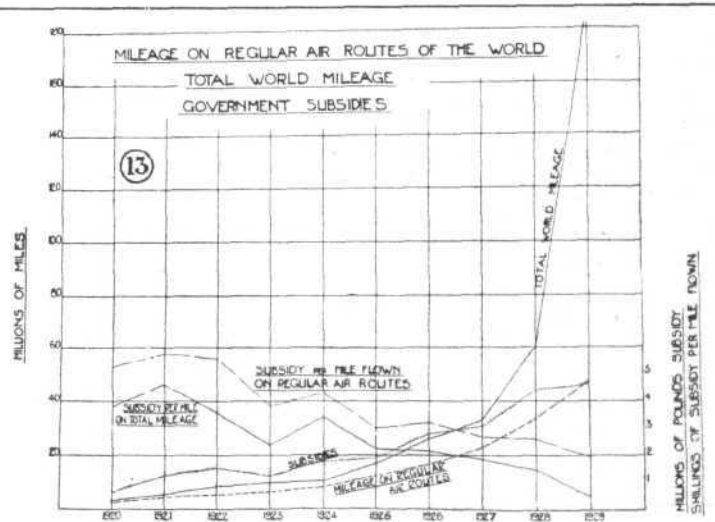
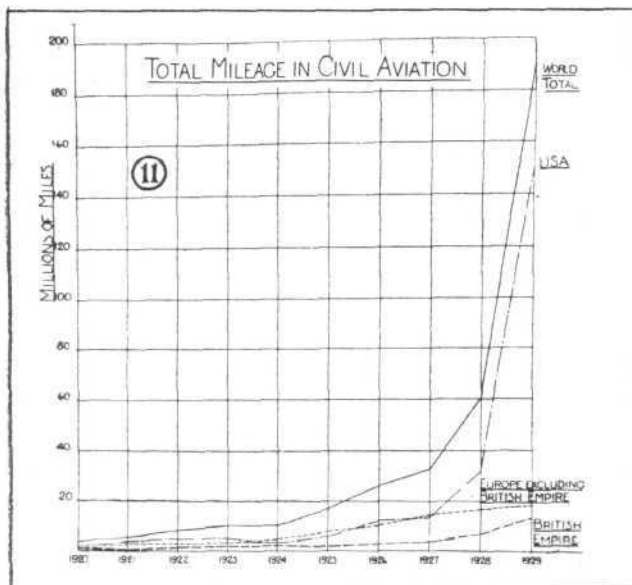
It is to be noted that without including any military flying the world total mileage at the end of 1929 reached a figure of 189 million miles, all computed from published data, which we know is not complete. I should estimate the world total of 20 years ago at not more than 10,000 miles.

The question of total mileage inevitably brings up that of subsidy, so that it is very interesting to see what the world pays in subsidies and to endeavour to find out what it gets for its money. My next curve shows the subsidies paid in the period of 1920 to 1929 for the five principal subsidy-paying countries. Subsidies on the whole are increasing slightly. Great Britain shows only a very slight increase, from £200,000 in 1921 to £360,000 in 1929, and £448,000 for 1930-31, including, of course, the sums paid to open up new routes.



Italy shows a somewhat sharper increase and France a more rapid one still, the total there now reaching for 1930-31 a value between three and four times the British total.

Germany is apparently the only country in which the amount paid in subsidy is definitely decreasing, and it is to be noted that the curve for mileage flown in Germany, although falling slightly, is not falling as rapidly as the amount of subsidy paid.



No consideration of subsidy is complete without dealing with the American mail contracts, which, owing to their magnitude, have a very considerable effect on total world figures, and it is, therefore, as well to explain how I have dealt with these amounts. The total paid in American mail contracts for the year ending 1929 was approximately £3,630,000.

On the one hand it is manifestly unfair to include this total sum as subsidy since very effective service is rendered for it. On the other hand, if more is paid out than is received from the public, it might be correct to assume that the loss made by the Post Office should be reckoned as ordinary subsidy comparable with that paid in other countries. It is to be assumed that what the public pays, it will pay, and the increased mail rate is merely payment for the increased speed of delivery, but this total sum does not equal the amount paid by the Post Office for these contracts.

From data available the amount paid by the public for each year in which the figures are forthcoming has been calculated and deducted from the amounts paid out in contracts. The balance has been credited to the totals as subsidy.

This may be a point for controversy, but the results show a similar tendency to those of world subsidy in aviation, but since the figures may be criticised I will give the basis on which they were calculated: for a total of 3,160 tons of mail, I have assumed a basis of 40 letters to the pound at a minimum rate of 5 cents a letter with an allowance for extra rates of foreign air mail and this basis gives a declining rate of subsidy for America with a very marked reduction for 1929, with the result that a figure of only £206,000 is computed as subsidy for that year. It will be noted that it would need a very considerable augmentation of this figure to alter the general result as shown for the world total curve.

Therefore, on the total mileage curve I have plotted the total subsidies paid for the corresponding period. These reach a figure of nearly £5,000,000 for last year.

Now, utilising these figures, let us consider their relation to the total mileage flown. In the early stages of civil aviation, as was to be expected, not much mileage was obtained for the subsidy paid out. In 1920, £600,000 of subsidy produced only 2½ million miles of flying, or at a rate of 5s. 4d. per mile for flying on regular air transport lines.

By 1921, matters were even slightly worse, and regular air route mileage was costing the world 5s. 9d. per mile in subsidy, but from that date a uniform and steady improvement has resulted, which certainly appears to indicate that aviation is reaching a true commercial basis. By 1925 air lines were costing the world 3s. per mile, and by 1929 this had dropped to 1s. 11d., a healthy decrease and a very good omen for the future of aviation.

Taking the same figures over the total mileage purely for purposes of comparison the curve has the same characteristics, showing a rise in 1921, a decrease from that period until, in 1929, for the total mileage flown only 6d. per mile was being spent by the world in this form.

Illustrating this point, it is interesting to compare the figures of Imperial Airways given by Major Woods-Humphery in *The Times*, of August 20, 1930, on this very question.

The table (Fig. 14) shows for five years the steady decline in the ratio of subsidy to income for this company dropping from 64 per cent. in the first year of operation at a very healthy rate to 50 per cent. in its fifth with only one check, that of 1928, when the air route to India was inaugurated and naturally greatly added to the expenses. Similarly,

Fig. 14.—Progress of Imperial Airways, Ltd., since Formation in April, 1924

|             | Profit and Loss. | Subsidy as Percentage of Income, per cent. |
|-------------|------------------|--|
| 1st year .. | £ 15,217 loss    | 64   |
| 2nd " ..    | 20,415 "         | 61   |
| 3rd " ..    | 11,465 profit    | 54   |
| 4th " ..    | 72,567 "         | 58   |
| 5th " ..    | 78,861 "         | 50   |

|         | Subsidy. | Total ton-miles. | Subsidy per ton-mile. |                                 |
|---------|----------|------------------|-----------------------|---------------------------------|
|         | £        |                  | s. d.                 |                                 |
| 1925 .. | 137,000  | 383,752          | 7 2                   |                                 |
| 1926 .. | 167,000  | 493,563          | 6 9                   |                                 |
| 1927 .. | 230,600  | 538,366          | 8 7                   | Cairo-Basra service started.    |
| 1928 .. | 230,600  | 798,738          | 5 9                   |                                 |
| 1929 .. | 341,500  | 994,351          | 6 10                  | London-Karachi service started. |

the subsidy per ton-mile shows a decrease at 7s. 2d. per ton-mile in 1925, to 6s. 10d. in 1929, despite the inauguration of the Cairo-Baghdad and London-Karachi services, both of which events reflect slightly on the figures for their corresponding years.

An indication of the growth of unsubsidised concerns is given by the following figures for the British Empire operating in 1929:—

#### Aircraft Users Operating Without a Subsidy BRITISH EMPIRE

*England*:—2 Air Survey, 1 Air Photography, 6 Flying Schools, 5 Flying Clubs, 1 Skywriting and Crop Dusting, 9 Air Taxi, 12 "Joy riding."

*India*:—1 Air Survey, 1 Air Transport.

*Australia*: 10 Air Transport (Route mileage, 4,240 miles), 4 Air Taxi, 6 Joy riding.

*New Guinea*:—(Companies registered in Australia). 3 Air Transport.

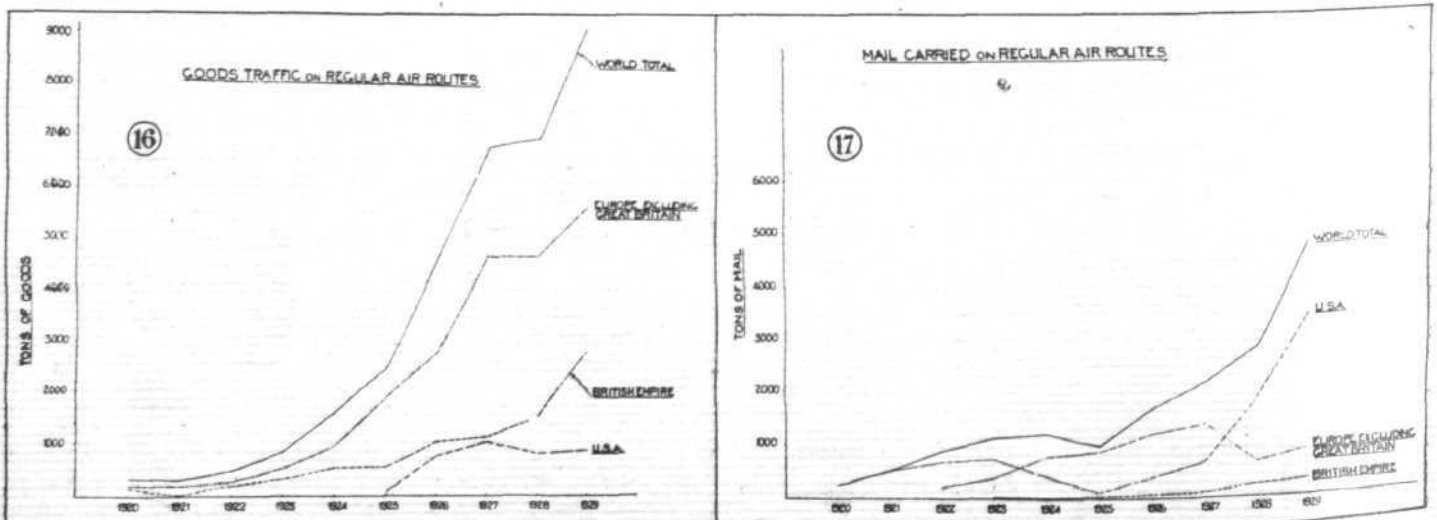
*Canada*:—10 Air Transport, 13 Air Taxi and prospecting, 2 Schools, 2 Forest Survey, 3 Photography, 16 Joy-riding.

*South Africa*:—9 Flying Clubs.

After mileage the figures for passenger traffic, goods and mails carried provide equally interesting results. In each of these cases I am taking only statistics from regular air transport apart from some estimates I am able to submit for recent totals. Here the figures may be taken as reliable and are compiled from authentic records.

Dealing first with the questions of passenger traffic, the curves in Fig. 15 do not show quite the same characteristics as that of world flying, which in the past two years showed its most marked expansion. Within the British Empire from its small beginnings in 1920, it had reached a figure of 16,500 by 1923 which remained practically constant until 1926, when the upward tendency starts. By 1929, British Empire air routes were carrying 128,000 passengers, equivalent to 25 per cent. of the world's totals.

Taking Europe, excluding Great Britain, the upward trend started in 1924, and following a set-back in 1926,





reached, roughly, two years ago the same figure that it is now, i.e., just short of 250,000. In marked contrast to other results, passenger traffic in Europe has expanded very little in the last two years. In the United States of America the curve takes the characteristic shape for that country. In 1928, the traffic was little more than one-half that of the British Empire. By 1929 it exceeded it by only 30 per cent. yet the rate of growth is much faster here than in any other country.

Since other countries do not greatly influence the result the world totals show the effect of the British and American increases of the past two years and the curve has the same healthy aspect that other world totals in civil aviation usually present, and on the regular air lines of the world it will be noted that passenger traffic exceeded half-a-million people in 1929.

Turning now to goods and mail, again I am quoting only figures on regular air transport, and these are somewhat complicated by the fact that up to 1926 in certain countries mail and goods were recorded together. In goods traffic the British Empire holds an important place and in sharp contrast to other results, America shows an actual fall in the past two years, whereas Europe over the same period shows a marked increase as does the British Empire.

In the world total of over 9,000 tons, Europe carries 60 per cent., the British Empire 30 per cent., and America takes the lowest place of the big powers with only 10 per cent. carried.

With regard to mails this situation is reversed. The general curve of growth shows the same characteristic as the others, which is, of course, very much influenced by the American mail services, and here America dominates the situation with 72 per cent. of the total carried, and the British Empire takes the lowest place with only 6 per cent.

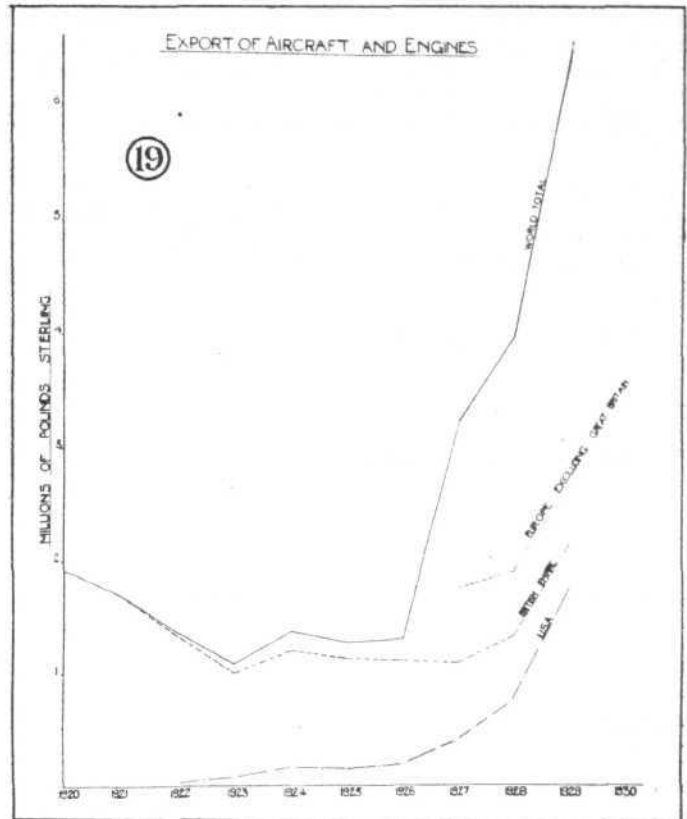
Many other figures could doubtless be taken, directed to illustrate the growth of civil aviation, but I think that they would show the same general characteristics of a slight and sometimes variable growth from 1920 up to 1927, and then a marked advance.

Such statistics as numbers of pilots licensed, aerodromes, certificates of airworthiness issued and so on, interesting in themselves, would only show the same general appearance and confirm the results of the other figures.

The industrial side of aviation is presumably of not so great an interest to The Royal Aeronautical Society as the technical and operational, and I am submitting only a few figures indicating the size of the industry; they are, of course, approximations only. During the war, the aircraft industry reached colossal proportions, but after the war, the slump must have reduced it to very small dimensions indeed. Since then its growth would be expected to reflect the growth of other aerial activities.

In this branch again reliable statistics are available only from America and Great Britain, and world totals can only be given by adding estimates for the other countries concerned. The aircraft industries of the world are still largely supported by the military vote, but there is every indication of the healthy growth of an industry altogether separate from that concerned with the military side.

On the Continent, with the exception of Germany and Holland, the aircraft industry is nearly entirely dependent on Government contracts and export. Germany has no war industry at all, but on the other hand, receives very substantial assistance in various forms from Government sources, and is in effect as dependent on Government assist-



ance as most other countries and more so than some. In England 70 per cent. of the firms depend upon Government contracts and nearly 20 per cent. of the total turnover is purely Civil Aviation. Last year exports of complete aircraft and engines both military and civil, amounted to 15 per cent. of the whole British trade. Within the past two or three years there has been a marked growth in England of purely civil firms. In America the civil industry has far outstripped the military, and is easily the dominant factor.

In Italy, the number of firms has remained constant for four years. In Germany, it has increased slightly.

England has remained practically constant from 1920 to 1928, but shows a marked rise in the past two years, reflecting the civil aviation activities in the British Empire.

The apparent decline in the French numbers for the past few years is probably connected with the grouping of the industry that has been taking place.

The American figures show the same remarkable rise in the past few years as for those of the operational and other activities.

There is not sufficient data available to give similar figures for the world, but it will be noted that they reach a total of 169 firms in 1929 for these countries.

I regret to say that I have failed entirely to collect figures that would give the world total of the annual output of aircraft, but I think that they would show the same general tendency as the other figures, that is to say, a very marked rise in the past two years influenced largely by America.

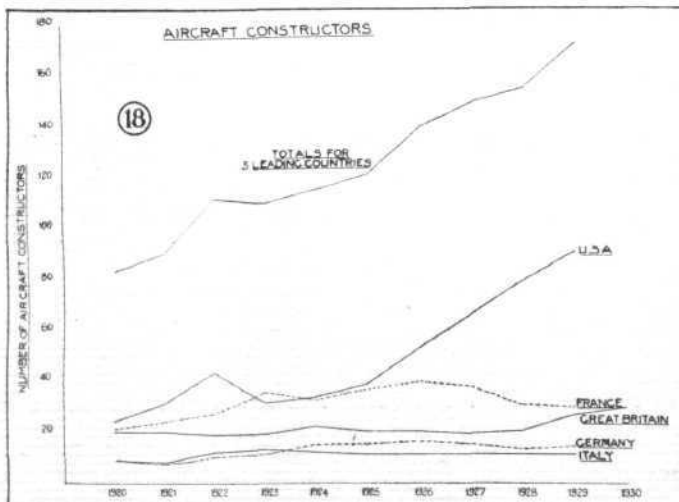
At a guess, the total aircraft produced for 1929 was not less than 10,000 machines.

The export trade is becoming quite important, the total export turnover for the world for 1929 being apparently £6,600,000 sterling. The total people employed in 1929 is estimated to be not less than 70,000 people. The total capital of the world's aircraft industry at the present time amounts to approximately £20,000,000, excluding America, where the recent slump has reduced the value of investment to £65,000,000.

Obviously, the aviation industry is dependent for its future expansion on the growth of world civil aviation and this has been shown to be taking place mostly in the United States and in Canada and Australia, but generally the growth of the industry would follow the other activities, that is to say, that part engaged on purely military work would show only a slow growth, but the civil industry is advancing rapidly.

In considering these general results, I hope that my previous remarks as to the reliability and completeness or otherwise of the figures will be borne in mind.

In attempting the task of collecting the data from which to estimate the growth of aviation, one is confronted with a great mass of statistics, sometimes conflicting on certain aspects and for certain periods, and an equally great paucity



in others, a fact which accounts for the many gaps in the figures presented. Nevertheless, making all allowances for the weaknesses of statistics as such, and of the danger of utilising them for purposes of prophecy, it is obvious that aviation is growing, and growing very fast.

In technical achievement the advance proceeds apparently unchecked, although manifestly this rate of progress cannot be maintained in view of the limits set upon record performances by natural laws. But these coming limits have as yet not been reflected in the rate of advance except in the case of the altitude record.

Military aviation is growing but slowly in amount, however much it may be achieving in efficiency, but civil aviation is proceeding triumphantly.

The world regular mileage is growing, the subsidy rate per mile is falling, and such aviation is approaching a true commercial basis.

Other forms of flying, mostly unsubsidised, are advancing tremendously, and this advance is nearly all taking place within the British Empire and the United States.

It is, of course, to be expected that in Canada, Australia, and America, countries of vast area not nearly so highly developed with regard to other communications as are the older countries of Europe, that aviation would have its great chance, but few would expect to see so marked a result as is disclosed by these figures.

The potentialities of these countries are, I think, the most marked feature brought out by the figures, and in these and similarly situated countries would appear to be aviation's greatest opportunities.

From its small beginnings early in this century, aviation covers to-day a distance of nearly 200,000,000 miles without counting military aviation, over half-a-million passengers, nearly 10,000 tons of goods and nearly 5,000 tons of mail are carried annually on scheduled services alone, its industry capitalised at nearly £100,000,000 gives employment to 70,000 people, and the civil part of the industry is only just beginning.

The root causes of this growth of aviation are still with us,

and certainly not less today than in the past, and so it would appear that aviation is indeed in its infancy and with an incalculable future before it.

Mr. Fairey concluded by saying that as this was the first meeting since the retirement of Col. Sempill, he would like to make some remarks on the great work done by the retiring president. Being in a statistical mood, he would give them some figures of Col. Sempill's career. During his term of office there had been 80 lectures, and Col. Sempill had taken the chair at 79. Out of 50 Council meetings Col. Sempill had attended 49. Referring to Col. Sempill's career as a pilot, Mr. Fairey said that the retiring president of the society had flown some 3,000 hours, on about 150 different types of machine, and had in that flying time covered some 250,000 miles. His last tour had been one of some 2,000 miles around the Baltic, terminating in a daring (he almost said reckless) flight across the North Sea to Scotland. The rise in the membership of the society had coincided with Col. Sempill's term of office, and he did not regard this fact as purely accidental. Many messages of congratulations had been received, but he would read one of them only, from His Royal Highness the Prince of Wales.

Col. Sempill expressed gratitude to Mr. Fairey for a paper which had been of absorbing interest and which gave, for the first time, in a convenient form a picture of the progress of flying. The work involved must have been very great, and he thought this might be taken as a very good omen for Mr. Fairey's term of office as president of the society.

Lieut.-Col. Moore-Brabazon, vice-president of the society, paid a tribute to the retiring president, and pointed out that there was some disadvantage in following a very good president. Mr. Fairey had their sympathy in having to follow Col. Sempill.

Referring to the curves shown by Mr. Fairey, Col. Moore-Brabazon pointed out the geographical differences between the United States and the British Empire, and said he thought it would be interesting to have a similar paper read in 10 years' time, when probably all the curves would be found to have flattened out.

## ANNUAL GENERAL MEETING OF N.F.S.

THE first annual general meeting of National Flying Services, Ltd., was held at the London Air Park, Hanworth, on October 14, when the accounts of the company for the 16 months ending July 31, 1930, were passed. Capt. Guest, the chairman, made a statement on the position of the company, from which we have extracted the following main points:—

After calling attention to the company's balance-sheet, which showed a loss for the first year's working of £39,282, Capt. Guest proceeded to explain how this loss had been incurred. During the last few weeks negotiations had been in progress for the raising of fresh capital, and he was glad to be able to state that there was every prospect of this capital being raised. The company, Capt. Guest recalled, was formed in April, 1929, but it proved impossible to begin activities on a large scale until December, 1929, which meant that the flying season of 1929 was largely lost. By the early spring of this year stations were in operation at Hanworth, Reading, Hull, and Leeds. Nottingham came into operation at the end of the period under review, and Blackpool had recently been added.

Among the reasons why the year had not been successful, Capt. Guest mentioned that the weather had been abnormally unfavourable, that the general industrial depression had resulted in unwillingness to spend money, that the company was unable to earn more than £740 of the subsidy promised by the Government, but the Air Ministry had agreed to advance £2,500 on account, that contracts for aircraft had proved of less value than expected, and that delays had occurred in the progress of constructional work, due mostly to bad weather. The expenditure of the company covered a period of 16 months, while the revenue was being earned during 11 months only.

The following figures were quoted by Capt. Guest to give an idea of the steady growth of the company:—

**Membership.**—September, 1929, to July, 1930, by months: 494, 749, 883, 1,001, 1,110, 1,183, 1,298, 1,341, 1,406, 1,453, 1,564 (trebled in 11 months).

**Paid Flying Hours.**—September, 1929, to July, 1930, by months: 701, 683, 598, 481, 501, 556, 908, 847, 1,157, 1,631, 1,288 (average of last three months double of first three months).

**Air Taxi Mileage.**—April to July, 1930, by months: 3,234, 5,181, 5,847, 6,594 (doubled in four months).

**Passengers Carried on Short Flights.**—February to July, 1930, by months: 131, 456, 1,499, 1,471, 5,798, 3,167.

**Air Ministry Licences, exclusive of Renewals, taken by N.F.S. Clubs, by Quarters.**—Three months ending December, 1929, 27; March, 1930, 32; June, 42; September, 65; Total, 166.

Up to August 31, 1929, the gross revenue totalled £3,521; from that date to February, 1930, £26,839; between February and August, 1930, £38,452.

In the past year the company's aircraft had flown over 13,000 hours, which was equivalent to approximately 1,000,000 miles. Of the total membership of the clubs, amounting to 1,637, there were 912 active flying members, and of these, 229 held "A" licences and 52 had purchased aircraft of their own.

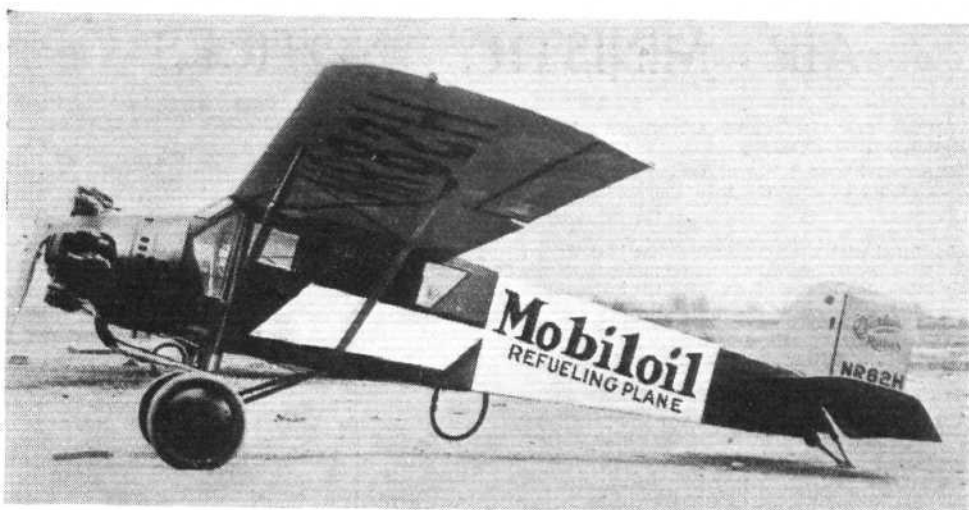
The accounts of the company were passed unanimously. Capt. W. S. Stephenson was re-elected a director, and Lady Bailey retired from the board owing to other calls on her time. Messrs. Whinney, Smith, and Whinney were re-appointed auditors.

### Institution of Mechanical Engineers

A DINNER was held on October 16 to celebrate the grant of a charter to the Institution of Mechanical Engineers. Air Chief Marshal Sir John Salmond, Chief of the Air Staff, in proposing "The Institution and its Charter," said that it was 83 years ago since it was founded by George Stephenson, who was elected chairman at the first general meeting in Birmingham in 1847. With the raising of the general level

of mechanical proficiency they should be in a position to meet the demand for mechanical propulsion when the science of aerodynamics required it. Dealing with the many activities of the Institution, he said that their investigations into the nature of alloys had been of inestimable value to the R.A.F. He was pleased to say that only recently it had been agreed to award national diplomas in mechanical engineering to R.A.F. officers who had passed the engineering course at Henlow.





The Curtiss "Robin" monoplane which is equipped for re-fuelling aircraft in mid-air.

## RE-FUELLING IN THE AIR

THE organisation of such a flight as Wing-Com. Kingsford-Smith's recent Atlantic flight calls for no little forethought if everything is to work smoothly and schedule adhered to. That this must have been as near perfection as possible is borne out by the successful termination of the ambitious undertaking, but there is one feature of the flight, which, by reason of the landing at Harbour Grace, did not figure in reports dealing with the flight.

It may not be general knowledge that it was Wing-Com. Kingsford-Smith's intention to make a non-stop flight from Ireland to New York, and but for "dirty" weather off Newfoundland, he would have carried out this project; but how could he have done so in view of the fact that the *Southern Cross* did not carry sufficient fuel to give a safe margin for a non-stop flight of such duration? The solution is to be found in the re-fuelling 'plane, a development of flying which seems to have been left to America to perfect and to carry out in the way of ordinary routine work.

Although this re-fuelling scheme was not actually carried out in the *Southern Cross* Atlantic flight, we think the following brief notes concerning the method of re-fuelling which was to have been employed, may be of interest.

In this particular case, the Vacuum Oil Company chartered a Curtiss "Robin" monoplane—the identical machine used in refuelling the "St. Louis Robin" last year when Dale Jackson and Forest O'Brine established a world's re-fuelling endurance record. Such a 'plane has a definitely limited area of action, owing to the small amount of fuel carried in its own tanks, and, therefore, if the 'plane it has to refuel runs short outside a certain radius it is not practicable for the re-fuelling 'plane to go off in search. It was such a circumstance that thwarted the enterprise of the Vacuum Oil Company, in respect to Kingsford-Smith's flight, as it was quite impossible for the "Robin" to reach the *Southern Cross*.

The re-fuelling of a 'plane in flight is fraught with certain real risks and taking the case under review as an example, it

may be mentioned that the re-fuelling 'plane flies "blind" to the 'plane it is re-fuelling immediately it gets above and in the correct position to make "contact."

In the cabin of the "Robin" is a 48 ft. length of 1½-in. rubber hose. This hose is let down and was to have been caught through the hatch of the *Southern Cross*. With regard to oil and food supplies the *Southern Cross* would have received these commodities in metal cylinders which were to have been let down on cords. It will be appreciated that, particularly in the case of re-fuelling, extraordinary care must be exercised in keeping both 'planes at the same air speed; a deep air pocket encountered by either would probably cause considerable inconvenience if not disaster.

In this case the *Southern Cross* was not designed for re-fuelling, and it is not clear just how they would have connected the fuel hose had they come within range of their re-fuelling 'plane. That there is a definite fire risk in any circumstance is fairly evident, but men such as accomplished this big flight would not be deterred by hypothetical possibilities. The "Robin" could have passed 125 gallons of fuel into the tanks of the *Southern Cross* in 10 minutes or less, and although fresh Mobiloil was carried on the "Robin," the oil consumption figures were so remarkably low that actually no further supply would have been required. It may be added in this connection that the *Southern Cross* was flying for 46 hours 56 minutes and during this time covered 3,100 miles, with a total oil consumption of only 10.68 gallons or 3.56 gallons per engine.

Incidentally, the three Wright "Whirlwind" engines on being dismantled were found to be in perfect condition and careful checking of clearances, &c., showed that no adjustments or replacements of any kind were required. It may be recalled that when Col. Lindbergh's engine was dismantled for examination after his Atlantic flight, its condition was similarly perfect, facts which speak volumes for the high quality of Mobiloil, the lubricant used in both cases.



### Armstrong Siddeley Quality

STAGED at the great Motor Show which opened at Olympia last week are outstanding examples of Siddeley "quality" as represented by cars and engines for one and all to see, a reminder of the quality which in like manner is embodied in the construction work of Armstrong Siddeley in their Aviation Section. At a little social gathering on Thursday, when the A-S. agents foregathered at the Kensington Palace Hotel, Mr. Siddeley, when presiding, referred to a recent visit to the works of most of those present, and summed up the present trade situation briefly but emphatically. Whilst admitting the increasing difficulty year by year of selling some particular car, with so many makes, many good and very few bad ones, success resolved itself into a matter of salesmanship. Success was bound to follow with properly applied energy—especially in their particular case, having regard to quality tending to durability and economy. Transport quality meant comfort, ease to drive, silence, always getting there, and, not least, appearance. These, backed up by good service, which his company

never grudging, represented one of the greatest assets in selling cars. They followed the traditions behind their business—the best British standards—the best in the world. Cheapness must mean loss of quality. As pioneers of the self-changing gears, they saw the value of this innovation by it being copied the world over, giving promise of a great future. In spite of the difficulties of to-day, he was convinced there were better times in view. If, he said, Saving Certificates representing a million a week were being accumulated, things were not so bad as they might appear on the surface. Following, a very human *résumé* was given of the life's great work of Mr. Siddeley by Mr. Massac Buist, supported by Mr. Gordon Aston, when proposing a vote of thanks to the host of the day. Altogether a very happy and encouraging gathering.

### Russell Parachutes for Blackburns

WE are informed by the British Russell Parachute Co., Ltd., of Stoke Newington, that the Blackburn Aeroplane and Motor Co., Ltd., of Brough, have adopted the Russell Lobe parachute as standard equipment for their aircraft.

# AIR MINISTRY NOTICES

## AIR MINISTRY NOTICES TO AIRCRAFT OWNERS AND GROUND ENGINEERS

### Maintenance of B.T.H. Magnetos, Types A.V. and S.V.

The following precautions should be observed with B.T.H. magnetos, types A.V. and S.V. :—

#### 1. LUBRICATION.

Before starting up an engine fitted with a magneto which has been drawn from store, or has not been run for some time, care must be taken to ensure that the magneto is correctly lubricated in accordance with the instructions given below.

In this connection, it should be noted that magnetos of the above-mentioned types are fitted with distributor gear wheel bearings of either:—

(a) the plain phosphor bronze type with wick lubrication, or (b) the ball bearing type, and the lubrication requirements vary accordingly. Magnetos fitted with the ball bearing type of distributor gear wheel bearing are identifiable by the letter "F" or "G" suffixed to the magneto type number, viz., A.V.12.F., etc.

(a) *Magnetos fitted with plain phosphor bronze distributor gear wheel bearing with wick lubrication.*

The distributor gear wheel bearing reservoir is to be filled to overflowing through the left-hand hole (when facing the distributor) in the oil cup at the distributor end of the magneto. This can be observed by first removing the distributor block, when the overflow hole in the securing flange of the bearing housing can be seen through an opening in the distributor gear wheel.

In addition, six drops of oil should be injected into each main bearing through the oil cups at the driving and distributor ends (right hand hole), one drop on to the contact breaker cam lubricating pad and one drop on to the contact breaker pivot pin wick. To effect the last, it is only necessary to move the retaining spring to one side.

This provision of oil should normally be sufficient for 12 hours running. Thereafter, at similar intervals, six drops of oil should be given to the distributor gear wheel bearing, with treatment of the other bearings and parts as stated above.

If the machine stands idle for two or more weeks, the gear wheel bearing reservoir should again be filled to overflowing, with treatment of the other bearings and parts as stated above.

(b) *Magnetos fitted with ball bearing distributor gear wheel bearing.*

Before running the magneto, three drops of oil are to be injected into each of the oil cups at the driving and distributor ends of the magneto, one drop on to the contact breaker cam lubricating pad and one drop on to the contact breaker pivot pin wick.

This provision of oil should normally be sufficient for 50 hours' running. Thereafter, at similar intervals, this oiling should be repeated, and should always be given before running, if the machine stands idle for two or more weeks.

#### 2. CONTACT BREAKER.

The gap between the contact breaker points should be maintained within 0.013 in. and 0.011 in. A gap of 0.012 in. may be regarded as normal.

The contact breaker points should be cleaned, if necessary, with very fine emery cloth, care being taken to ensure that no emery dust is left on the contact breaker; a file should *not* be used for this purpose. A soft brush is convenient for cleaning the contact breaker.

#### 3. DISTRIBUTORS.

In changing the magnetos on an engine, it is essential that the original distributor block should be removed, and the new magneto attached complete with its own distributor. The changing of a distributor block from one magneto to another is most undesirable, owing to the possibility of the rotor brush fouling the distributor segments, due to the small gap between these parts and to the working tolerances necessary on the distributor, end plate, gear centres, etc.

The setting of the spark gap between the rotor main electrode and the distributor segments must be correctly maintained within the limits of 0.018 in. and 0.022 in. Normally it should be unnecessary to interfere with this gap, which is correctly set for each individual magneto before its despatch from the maker's works.

The gap between the rotor starting electrode and the distributor segments should be between 0.025 in. and 0.030 in.

#### 4. HAND STARTER TERMINAL.

Care must be taken, when fitting the starter lead to the distributor, that the terminal screw is properly locked by the spring strip provided for the purpose. The screw should be tightened by a box spanner which at the same time will press down the spring clear of the hexagon; on release, the spring should lock the screw, the latter being turned slightly, if necessary, to ensure this. No part of the screw or the locking spring must project beyond the face of the distributor.

On distributors of a later type the terminal screw is locked by means of a small tab washer which replaces the locking spring on the previous types. When fitting this washer care must be taken to ensure that the small tab is located in one of the holes drilled in the brass insert provided for the purpose, and a larger tab must effectively lock the terminal screw.

Distributors of a still later type are provided with an external terminal screw for the hand-starter lead, thereby removing the necessity for the locking methods referred to herein.

5. CANCELLATION.—Notices to Ground Engineers Nos. 1 of 1922 and 5 of 1923 are hereby cancelled.

*Corrigendum.*—Notice to Aircraft Owners and Ground Engineers No. 22 of 1929, having been cancelled by Notice No. 7 of 1930, should be deleted from the lists of operative Notices in the Index: 1920-1929 (Notice No. 22 of 1930) and in the consolidated booklet of Notices for the years 1920-1929. (No. 26 of 1930.)

### Cirrus and Gipsy Crankcases: Examination for Cracks in Main Bearing Housings

#### During Overhauls.

1. Generally after long periods of running, slight cracks may sometimes develop in the main bearing housings of Cirrus and Gipsy engine crankcases, running from the inner edge of the joint face down the bore of the main bearing housing in a line with the axis of the bearing cap stud.

2. If not dealt with, such cracks, initially unimportant, are likely to extend with further prolonged running, and eventually produce a slackening of the bearing stud and the scrapping of the crankcase.

3. At each complete overhaul and/or when other opportunity occurs, a close examination of each main bearing housing should, therefore, be made through a suitable magnifying lens.

4. Provided any cracks so found, measured from the inner edge of the joint face, do not exceed  $\frac{1}{8}$  in. length on the port or oil feed side of the housing and/or  $\frac{1}{4}$  in. length on the opposite side of the housing, they should be dealt with as follows:—

5. After carefully locating the end of the crack, remove the adjacent bearing cap stud and drill a hole  $\frac{1}{8}$  in. diameter at the end of the crack through to the stud hole at an angle following so far as can be ascertained the transverse line of the crack. Finally remove all trace of drillings and burrs from the inside of the stud hole and carefully refit the stud.

6. A suitable entry recording the repair is to be made in the log book.

7. Crankcases with cracks exceeding the lengths specified in (4) above should be treated as unserviceable.

(No. 32 of 1930.)

### D.H. 60 X, G. & M "Moth" Aircraft: Rib Attachment to Front Spar

1. THE modification referred to in Notice No. 2 of the year 1930 does not apply to the following aircraft:—

(a) D.H. 60 type "Moths" Constructor's No. 336 or under, and 343 to 399.

(b) D.H. 60 X, G or M "Moth" aircraft in which the top of the leading edge of the main plane is covered with uninterrupted ply from the front spar to the leading edge, but it does apply to those wings with ply covered nose in which the ply is cut away where each rib and riblet passes over the front spar.

(No. 33 of 1930.)

### "Spartan" Aircraft Top Centre Section Front Wiring Plates

1. THE attention of all ground engineers is directed to the fact that a case has occurred where the front top centre section wiring plate has been torn by the pin carrying the centre section cross bracing wire.

2. These fittings, therefore, should be examined immediately with the forks and pins removed, and, should elongation of the holes be discovered, the plates must be replaced.

3. Where replacement of these fittings is necessary, Part No. 162 D should be fitted in the case of a single or 2-seater aircraft, and Part No. 757 C in the case of a 3-seater.

4. No Certificate of Airworthiness will be renewed in respect of any "Spartan" aircraft unless the above mentioned modifications have been satisfactorily incorporated.

(No. 34 of 1930.)

### Aircscrews for Genet Major Engines

1. THE following wooden aircrew designs for the above engines have shown a tendency to weakness in the vicinity of the junction of the blades with the boss. These designs have been modified to provide increased strength in the region of the blade root junction and the resulting new designs are also shown below. The old types of airscrews referred to should be replaced by the appropriate new design at the earliest opportunity, and in any case not later than 31st instant.

| Old Design  |         | New Design  |                 |
|-------------|---------|-------------|-----------------|
| Drawing No. | Y. 684  | Drawing No. | Y. 684 Issue 2. |
| " "         | Y. 694. | " "         | Y. 694 Issue 3. |
| " "         | Y. 690. | " "         | Y. 690 Issue 3. |

2. Pending their replacement, airscrews of the above-mentioned old types are to be inspected for any indication of fracture of the timber at the roots of the blades on both surfaces, and, in addition, at the periphery of the boss adjacent thereto, prior to each flight. At the first appearance of any such fracture the airscrews must be rejected.

3. After airscrews have been assembled in hubs, the hub bolts must be correctly tightened and their tightness checked periodically to ensure that no movement between aircrew and hub can occur. When assembling the hub to the aircrew shaft the surfaces making contact must be in a dry condition, while the front nut must be correctly tightened and its tightness checked periodically.

4. No Certificate of Airworthiness will be issued, or existing Certificates of Airworthiness renewed, after October 31, 1930, in respect of aircraft fitted with airscrews of the old designs quoted above.

(No. 35 of 1930.)

### A Test Case

A LEGAL decision, of particular interest to all pilots and aircraft operators, was made at the Preston Quarter Sessions on October 16, when Capt. F. C. Crossley, of National Flying Services, the Pilot-in-Charge at Blackpool Aerodrome, appealed against a conviction by the Blackpool magistrates in a prosecution by the local police for dangerous flying. The appeal was allowed, with costs. The case is of no little importance in establishing the unreliability of estimates of speed and height given by persons inexperienced in judging these factors. The evidence for the prosecution, before the Blackpool magistrates, was given by three members of the Blackpool Constabulary, and consisted of charges of low flying over Blackpool, supported by estimates of height, which

varied from 150 ft. to "skimming the chimney-pots." For the defence, evidence was given by Capt. Crossley, and by two other persons who were flying as passengers with him, that at no time when the machine was over Blackpool did the altimeter register less than 800 ft. The grounds of the appeal were that the magistrates' verdict was against the weight of evidence. Without having any additional witnesses, the bench stopped the case and allowed the appeal. Mr. Jackson, K.C., and Mr. Rowson appeared for Capt. Crossley, and Mr. J. Jeffs, one of the traffic control officers at Croydon Aerodrome, attended as an expert witness in support of the appeal. The Guild of Air Pilots and Navigators was legally represented in the court in order to watch the interests of pilots generally.



## ATLANTIC AIRWAYS, LTD.

WE have received the following report of the Directors of Atlantic Airways, Ltd., for the twelve months ended June 5, 1930, which, we think, may be of interest. The Directors of A.A.L. are Sir Algernon Aspinall, C.M.G., C.B.E. (Chairman); Lt.-Col. Ivan Davson, O.B.E.; Air Commodore J. G. Weir, C.M.G.; and Mr. Alan E. L. Chorlton, C.B.E., M.Inst.C.E. The Managing Agents are Garraway, Black and Co., Ltd. The report reads—

"This Company was registered on June 5, 1929, with a nominal capital in the first instance. Its objects are, *inter alia*, to establish and operate air transport services in the British West Indies, British Guiana, and the Caribbean area generally, and eventually to link up the islands and countries concerned with the Dominion of Canada by air.

"At present, although there are American, German and French concerns already established in the field, there is not a single British air transport company operating in the West Indies or Central and South America. It is towards remedying this deplorable state of affairs that the efforts of Atlantic Airways, Limited, have been and are being directed.

The Directors have appointed Messrs. Garraway, Black and Company, Limited, their Managing Agents, and desire to place on record their appreciation of the assiduous manner in which Mr. Garraway and Mr. Black have been conducting negotiations on their behalf. Their wide knowledge and experience have proved of great value.

"On October 4, 1929, the Chairman and the Managing Agents submitted a definite scheme to the Civil Aviation Consultative Committee appointed by His Majesty's Government at an interview at the Air Ministry. The Directors have reason to believe that the Company's proposals were viewed favourably by the Committee.

"Early this year the Directors, having learnt that there might be a possibility of Canada participating in the Company's enterprise, commissioned Brigadier-General Francis Festing, C.B., C.M.G., to proceed to the Dominion. Owing to the General Election it was not expected that any definite decision could be reached immediately, but General Festing's visit undoubtedly served to arouse interest in the proposals, not only in Government, but also in commercial circles.

"General Festing subsequently proceeded to Trinidad at the request of the Colonial Office to assist the Trinidad Government in the selection of an air base. He took the opportunity of discussing the proposals of the Company with various local Governments, and the Directors wish to express their appreciation of his services.

"The Directors, while submitting their Report, desire to place on record the sense of loss sustained through the deaths of Lord Thomson, Secretary of State for Air, and Air Vice-Marshal Sir Sefton Brancker, K.C.B., A.F.C., Director of Civil Aviation, whose untimely deaths they deplore. Sir Sefton ungrudgingly helped the Directors with advice, and it was largely due to his efforts that they are able to announce that His Majesty's Government, through the Colonial Development Advisory Committee, have consented to make available a substantial grant for the development of air transport in the Caribbean area, subject to a similar contribution being forthcoming from the Government of the Dominion of Canada, or the Governments of the West Indian Colonies.

"The Directors have established sympathetic relations with Pan American Airways Incorporated, the Sociedad Colombo-Alemana De Transportes Aereos of Colombia, and the Compagnie Generale Aeropostale of France."

## MISS AMY JOHNSON "AT HOME" AS HON.F.S.E.

A CROWDED and enthusiastic gathering of members of the Society of Engineers and a number of lady guests gave welcome, at the Holborn Restaurant, King's Hall, on Trafalgar Day, October 21, to Miss Amy Johnson, C.B.E., B.A., who had been elected an Hon. Fellow of the Society in recognition of her flying achievement to Australia, May 5-24 last.

The President of the Society, Mr. W. M. Beckett, who occupied the Chair, before giving the usual loyal toasts, made sympathetic reference to the R 101 disaster.

For the only toast of the evening, "Johnnie," the President gave a brief résumé of Miss Amy Johnson's life up to the date of her acquiring her ground engineer's certificate. Passing over the well-known details of her flight, he referred to the reply from Miss Johnson to which they were looking forward. Upon the Council of the Society hearing of her arrival in Australia, he said, the Society telegraphed to her saying they had elected her as an Hon. Fellow of their Society, asking her acceptance—the highest honour they could offer. In conclusion, Mr. Beckett said their guest had attended that evening against her doctor's advice, as she was determined she would not disappoint them of the promised talk they were shortly to hear.

Rear-Admiral Murray Sueter, who seconded the toast, related how, 21 years ago, Admiral Jellicoe and the powers that were, sent for him and asked him to switch over from submarines and take on the Air Service, which he gladly accepted—anything for a change. He in very humorous vein then referred to the early difficulties connected with his new job and the work entailed in inducing the Admiralty to take a real interest in matters of the air. That day, he said, was Trafalgar Day. He wondered what Nelson would have thought of the dilatory and unbelieving methods of these later-day authorities. Just think, he continued, if Nelson had then had a few aeroplanes to go up and tell him what was going on afloat. Things were, however, now very different following the years of development. Seaplanes at first kept up only a few seconds; now it was 67 hours! And so with speed, etc. In every direction a like advance had to be recorded. We had to thank, he thought, the great pioneers in aviation in making these great flights, and those who had made the machines—he noticed amongst those present, to mention only one, Mr. C. E. Fairey—and the engines which had enabled these steady advances to be made. The speaker then paid high praise to the engineers in this connection, adding that the one thing he would like to see and asked them to produce was a silent engine, and machine like a Rolls-Royce car—one that would just softly purr. After a tribute

to the late Sir Sefton Brancker—a splendid fellow—he said that in spite of the disaster, Lord Thomson and his gallant crew would still have said press on, instead of crying halt, in airship development. He was sure we were not going to run away from that development. In conclusion, he said Miss Johnson and other pioneers who had recently helped to cement the outlying arms of the Empire had formed an Empire chain in which a very big link stood in the name of Miss Johnson. The toast, with which he coupled the names of the parents of Miss Johnson, was drunk with musical honours.

Miss Johnson, in replying, asked her listeners to have patience with her "talk" which in a large measure, she said, would consist of certain technical details which she had embodied, as she had not anticipated being present at a gathering as she then saw, but rather expected she was to address a body of engineers. She hoped presently to publish in book form her own story of the facts of her flight as they actually occurred and thus clear up misunderstandings and correct certain misleading information which had been given forth. After paying a tribute to Wing-Com. Kingsford-Smith, Flight-Lieut. Hill and the other recent flyers, Miss Johnson read her paper giving details of her flight of a very interesting nature, prefaced by the "history" of the old Gipsy engine and her D.H. machine "Jason," which had served her so splendidly in her effort.

Judging by the paper which Miss Johnson then read, occupying a little over the hour, throughout which she continually relieved the relation of her troubles with a light and highly humorous touch, her promised book should be hugely successful by reason of the details, which will no doubt be further elaborated, of the happenings during her historic flight. Her experiences should prove a practical education in "how to do things" in flying solo.

Following the paper a vote of thanks to Miss Johnson was proposed by Dr. H. S. Hele-Shaw, who then formally presented their guest with the Certificate of her Fellowship of the Society, adding his congratulations at her great achievement.

Viscountess Rhondda, who supported the toast, after a few sympathetic remarks, said Miss Johnson had stirred the imagination of the Nation by her solo flight.

Professor C. Vernon Boys, who also seconded the toast, in complimenting their guest upon her remarkable feat, indulged in a whimsical mythological allegory of Miss Johnson's election to membership of their ancient Society of Engineers. A few words of thanks from Miss Johnson for her reception concluded a highly interesting evening.

# MODELS

## SOCIETY OF MODEL AERONAUTICAL ENGINEERS

THE first meeting of the winter season will be held at the Y.M.C.A., Tottenham Court Road, on Thursday, October 30, at 8 p.m., when there will be a discussion on "How to get back the Wakefield Cup." A model, sent by Mr. Joe Culver, of America, but which arrived too late for the competition, is being brought along to the meeting by Dr. A. P. Thurston, to whom it has been presented by Mr. Culver. This model has been timed for many flights of over 5 minutes each in America, so that members will be able to inspect first-hand the type of machine flown by the American team in the "Wakefield" Cup Competition. Members of the "S.M.A.E.," affiliated clubs, and anyone interested in model aircraft are cordially invited.—S. G. Mullins, Hon. Sec., 72, Westminster Avenue, Thornton Heath, Surrey.

## THE MODEL AIRCRAFT CLUB (T.M.A.C.)

Despite the heavy rain during the morning of Saturday, October 4, there was a very well-attended gathering of members at Wimbledon during the afternoon for the display arranged to finish off the 1930 summer season.

Members began to arrive about 1 o'clock, just as the rain was pouring its last farewell on the already sodden turf. The numbers quickly increased until by 4 o'clock about a hundred models were unpacked or being prepared for the air. Some very interesting exhibits were to be seen on the 'drome, viz., Mr. Dent brought along a most realistic replica of the fast "Interceptor," which displayed its air-worthiness and created much excitement among the spectators. Mr. Knight's cabin-monoplane was deserving of much credit, making several flights during the afternoon and evening, the latter flights (without undercarriage) finishing with spectacular landings in trees. Mr. Norman Peters was flying extraordinarily well a machine of his own design and, incidentally, won the distance competition. After tea the ultra-light-weights made their debut, Messrs. Willis and Newell flying balsa models of about an ounce each.

The rain clouds kept off, and while the wind was strong at times, there were distinctly few crashes. A very happy time was experienced by all and, although flying continued until dark, members were beginning to arrive at 9.30 on the following morning for their usual Sunday's flying.

It was truly a wonderful wind-up to a most successful season, and whilst the club's activities will no doubt be

carried on through the winter, we must all look forward with increased zest to another such summer season in 1931.

**Indoor Flying.**—The Horticultural Hall, Vincent Square, Westminster, has been booked on the following dates:—Thursday, November 6; Monday, November 17; Wednesday, December 10; between the hours of 7 p.m. and 9 p.m. Admittance will be through T.M.A.C. Membership Card.

Mr. D. M. Dent and Mr. A. T. Willis are in charge of the indoor flying. If these meetings are well supported, further dates will be booked.—Hon. Secretary, A. E. Jones, 48, Narcissus Road, West Hampstead, N.W.6.

## BOURNEMOUTH MODEL AIRCRAFT SOCIETY

We have received the following from the Hon. Secretary of the above club.—Officially founded, October 11, 1930. Founder, H. F. Weller (Hon. Secretary). Founder members, Messrs. H. V. Church (Hon. Treasurer), Ives, M. Hunt, A. Coach, S. Williams.

Terms of membership:—Senior membership (local members residing within 6 miles of the Square, Bournemouth), 5s. a year. Senior membership (distant members residing outside 6 miles of the Square, Bournemouth), 2s. 6d. a year. Junior membership (local), 17 years and under, 2s. 6d. Junior membership (distant), 17 years and under, 2s.

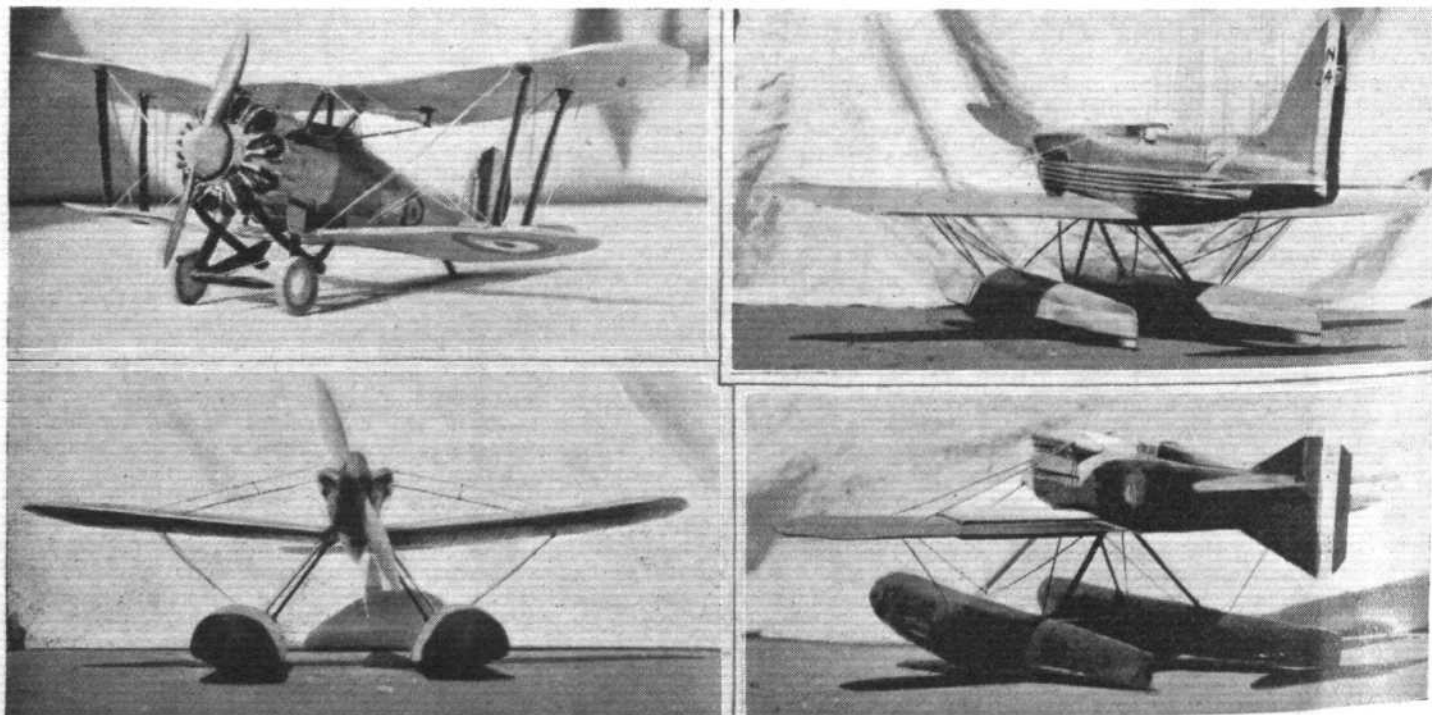
Hon. Secretary: H. F. Weller, 18, Madison Avenue, Bournemouth. Hon. Treasurer: H. V. Church, Lagos, Richmond Park Avenue, Bournemouth.

All communications should be addressed to the Hon. Secretary. Printing and other matter is receiving attention.

The Society as a living practical memorial to officers and men of H.M.A. R 101.

That October 11 was chosen by me as the founding date of the Society, because I hoped the formation of the Society would be accepted locally as a modest and humble memorial to those 48 worthy gentlemen who lost their lives in R 101, not in the *glamour for glory*, but in the pursuit of aeronautical knowledge and information, which they rightly believed would bring future benefit to their fellow countrymen.

I expressed the wish that as the only act of commemorating the inauguration of the Society on each anniversary of its founding date, a small laurel wreath should be sent to Cardington, to be placed on the R 101 memorial, as a symbol of the Society's respect for those who lost their lives, and a token of sympathy with the bereaved. Each individual founder member gave approval of my wish.—H. F. Weller.



**SCALE MODELS:** Four realistic scale models made by Mr. D. M. Dent from cardboard and other "oddments." They are—Bristol "Bulldog," Supermarine "S.6," Gloster-Napier VI, and the Fiat C. 29.



# THE ROYAL AIR FORCE

London Gazette, October 14, 1930.

## General Duties Branch

The following are restored to full pay from half-pay:—Air Vice-Marshal E. R. Ludlow-Hewitt, C.B., C.M.G., D.S.O., M.C. (Oct. 2); Wing Commander A. R. Arnold, D.S.C., D.F.C. (Oct. 11); Flight-Lieut. G. N. J.

Stanley-Turner is placed on the half-pay list, scale B (Oct. 10 to Dec. 9 inclusive).

## RESERVE OF AIR FORCE OFFICERS

### General Duties Branch

Pilot Officer L. E. Hunt is transferred from Class A.A. (ii) to Class C (Oct. 5).

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The following appointments in the Royal Air Force are notified:—

### General Duties Branch

**Air Vice-Marshal** E. R. Ludlow-Hewitt, C.B., C.M.G., D.S.O., M.C., to H.Q., Iraq Command, pending taking over command; 2.10.30.

**Wing Commander** E. J. P. Burling, D.S.C., D.F.C., A.F.C., to H.Q., Coastal Area, for Air Staff duties, 1.10.30.

**Wing Commanders:** H. Gordon-Dean, A.F.C., to No. 3 Wing H.Q., India, pending taking over command; 7.10.30. C. H. B. Blount, O.B.E., M.C., to No. 70 Sqn., Iraq, pending taking over command; 7.10.30. R. Graham, D.S.O., D.S.C., D.F.C., to H.Q., Iraq Command, for Air Staff duties; 7.10.30. F. C. V. Laws, to Aircraft Depot, Iraq, pending taking over command; 7.10.30. A. H. S. Steele-Perkins, O.B.E., to Sch. of Photography, S. Farnborough, to command; 7.10.30. D. Harries, A.F.C., to Air Ministry (D.O.I.) for Air Staff duties; 7.10.30.

**Squadron Leaders:** E. D. Johnson, A.F.C., to Marine Aircraft Experimental Estab., Felixstowe, 24.9.30. G. E. Godsave, to R.A.F. Base, Calshot; 1.10.30.

**Squadron Leaders:** R. Young, to No. 70 Sqn., Iraq; 7.10.30. E. R. Vaisey, to No. 58 Sqn., Worthy Down; 10.10.30. A. S. Maskell, to Home Aircraft Depot, Henlow; 10.10.30. A. C. Collier, to R.A.F. Depot, Uxbridge; 5.9.30. R. T. Leather, A.F.C., to R.A.F. Depot, Uxbridge; 6.10.30. J. Noakes, A.F.C., M.M., to R.A.F. Depot, Uxbridge; 6.10.30. H. A. Smith, M.C., to Home Aircraft Depot, Henlow; 7.10.30. G. H. Cock, M.C., to No. 2 Flying Training Sch., Digby; 6.10.30. R. S. Aitken, M.C., A.F.C., to H.Q., Air Defence of Gt. Britain, Uxbridge; 6.10.30. R. P. M. Whittham, M.C., to Air Ministry (D.O.S.D.); 6.10.30. A. W. F. Glenny, M.C., D.F.C., to H.M.S. *Hermes*; 3.10.30. J. C. Slessor, M.C., to School of Army Co-operation, Old Sarum; 1.10.30.

**Flight Lieutenants:** H. W. St. John, D.F.C., to R.A.F. Depot, Uxbridge; 28.8.30. R. O. Jones, to R.A.F. Depot, Uxbridge; 1.10.30. A. F. Hutton, to R.A.F. Depot, Uxbridge; 1.10.30. G. J. Southam, to H.Q., Wessex Bombing Area, Andover; 1.10.30. R. W. M. Hall, to No. 25 Sqn., Hawkinge; 1.10.30.

**Flight Lieutenants:** C. R. Strudwick, to R.A.F. Depot, Uxbridge; 8.10.30. S. E. Storrar, to No. 207 Sqn., Bircham Newton; 6.10.30. C. E. N. Guest, to H.Q., Coastal Area; 6.10.30. A. C. Sanderson, D.F.C., to Station H.Q., Kenley; 8.10.30. J. A. Gray, D.F.C., to R.A.F. Depot, Uxbridge; 19.9.30. E. J. Protheroe, to Station H.Q., Worthy Down; 4.10.30. R. L. Ragg, A.F.C., to Marine Aircraft Experimental Estab., Felixstowe; 10.10.30. C. F. Le Poer Trench, to No. 60 Sqn., India; 7.10.30. H. F. V. Battle, to Aircraft Depot, Indix; 7.10.30. G. H. Mills, to Aircraft Depot, India; 7.10.30. N. Keeble, D.S.C., D.F.C., to No. 1 Armoured Car Co., Iraq; 7.10.30. F. Wright, to No. 55 Sqn., Iraq; 7.10.30. H. F. Bradley, and C. A. Hoy, M.C., to H.Q., Iraq Command; 7.10.30. B. T. Hood, to Station H.Q., Hinaidi; 7.10.30. J. H. C. Wake, to Aircraft Depot, Iraq; 7.10.30.

**Flying Officers:** J. B. M. Wallis, to Central Flying School, Wittering; 29.9.30. P. G. Thomson, to R.A.F. Base, Gosport; 2.10.30. H. P. F.

Fagan, to Central Flying School, Wittering, on appointment to a short-service commn.; 27.9.30.

**Flying Officers:** C. A. Anderson, to R.A.F. Depot, Uxbridge; 5.9.30. K. S. Brake, to R.A.F. Depot, Uxbridge; 1.10.30. V. B. J. Jackson, to Central Flying Sch., Wittering; 22.9.30. R. S. Collins, to R.A.F. Base, Gosport; 8.10.30. F. C. G. Freeman, to No. 8 Sqn., Aden; 26.9.30. A. N. Luxmoore, and E. F. J. L'Estrange, to No. 30 Sqn., Iraq; 7.10.30. R. J. Cohen, and A. Earle, to No. 55 Sqn., Iraq; 7.10.30. G. D. Emms, to No. 84 Sqn., Iraq; 7.10.30. F. G. C. Stokes, to No. 31 Sqn., India; 7.10.30. R. F. Part, to No. 27 Sqn., India; 7.10.30. H. P. Fraser, to No. 31 Sqn., India; 7.10.30. D. H. V. Craig, to No. 28 Sqn., India; 7.10.30. D. B. Knapp, to No. 31 Sqn., India; 7.10.30. J. W. C. Glen, to No. 31 Sqn., India; 7.10.30. A. C. Watson, to No. 28 Sqn., India; 7.10.30. G. N. Roberts, to Aircraft Depot, India; 7.10.30.

**Pilot Officers:** G. B. Keily, to No. 1 Sqn., Tangmere; 23.9.30. W. F. Hilchie, to R.A.F. Depot, Uxbridge, on appointment to a short-service commn.; 22.9.30. The following are all posted to No. 5 Flying Training School, Sealand, on appointment to permanent commissions, with effect from 27.9.30:—H. St. G. Burke, T. B. Cooper, H. Ford, P. E. Hudson, G. E. W. Parish, W. R. Sadler.

**Pilot Officers:** G. M. Gillan, to H.Q., R.A.F., Halton; 3.10.30. W. O. J. Coke, to No. 1 Flying Training Sch., Netheravon; 7.10.30. T. N. McEvoy, and R. C. Warner, to Aircraft Depot, Iraq; 7.10.30. T. H. Carr, to No. 84 Sqn., Iraq; 7.10.30. T. F. Molony, to H.Q., Iraq Command; 7.10.30. D. M. Harrison, to No. 1 Armoured Car Co., Iraq; 7.10.30. W. H. Jones, to No. 30 Sqn., Iraq; 7.10.30. R. B. Abraham, to Aircraft Depot, India; 7.10.30. M. J. Adam, to Aircraft Depot, India; 7.10.30. D. Barclay, to Aircraft Depot, India; 7.10.30. N. Kirkham, to Aircraft Depot, India; 7.10.30. M. E. Pickford, to Aircraft Depot, India; 7.10.30. J. C. Atkins, to Aircraft Depot, India; 7.10.30.

### Accountant Branch

**Flying Officer** S. C. George, to No. 504 Sqn., Nottingham; 3.10.30.

### Medical Branch

**Squadron Leaders:** A. Briscoe, to Central Flying School, Wittering; 7.10.30. F. E. Johnson, to Station H.Q., Kenley; 10.10.30.

**Flight Lieutenant** M. J. Cahalane, to No. 2 Flying Training School, Digby, on appointment to a temp commn.; 3.10.30.

### Stores Branch

**Wing Commander** W. Millett, O.B.E., to H.Q., Iraq Command, for Stores Staff duties; 7.10.30.

**Squadron Leaders:** A. J. Briddon, to H.Q., Coastal Area; 13.10.30. E. M. Cashmore, to Aircraft Depot, Iraq; 7.10.30.

**Flight Lieutenant** E. N. D. Worsley, to H.Q., Iraq Command; 7.10.30.

**Flying Officers:** C. Thripp, to R.A.F. Stores and Supply Depot, Aden 26.9.30. M. M. McMullan, to No. 55 Sqn., Iraq; 7.10.30. H. A. Wrigley, and J. S. French, to Supply and Transport Services, Iraq; 7.10.30. G. Blinman, to Aircraft Depot, Iraq; 7.10.30.

## The Royal Air Force Memorial Fund

The executive committee of the above Fund held their fourth meeting of the current year on October 8, Sir Charles McLeod in the chair.

The committee, before they considered business, etc., passed, all standing, a resolution of sympathy with the Government in regard to the disaster to the airship R 101, and directed that the same be sent to the Secretary of the Air Ministry.

After the usual financial business, the resignation of his membership of the committee was announced in respect to Air Vice-Marshal E. R. Ludlow-Hewitt, C.M.G., who proceeds shortly to take over the command of His Majesty's forces in Iraq, relieving Air Vice-Marshal Sir Robert Brooke-Popham in that country.

In respect to the terrible disaster to the R 101, in addition to passing the resolution of sympathy with the Government above referred to, the committee authorised the provision of a wreath to be sent to the "lying-in-state" ceremony in Westminster Hall, and further directed the secretary to attend the memorial service on behalf of the committee at St. Paul's Cathedral on Friday, October 10, at 12 noon, and to also attend, if possible, the burial service at Cardington, Beds., on Saturday, October 11.

It was announced that Vanbrugh Castle School, maintained and managed by the committee, opened for the winter term on September 9 with a full attendance of 38 boys.

The committee authorised the usual provision of a wreath to be laid at the foot of the R.A.F. War Memorial on the Victoria Embankment, London, the ceremony taking place this year on November 9, the Sunday prior to Armistice Day, November 11; and it was announced that Air Chief Marshal Sir John Salmond, K.C.B., Chief of the Air Staff, had kindly consented to lay the wreath at 12 noon on the day fixed, with the usual brief and informal ceremony, and it is added that the executive committee cordially invite the attendance of the public.

The committee further authorised the provision of a wreath to be laid at the foot of the R.A.F. bay of the Scottish National War Memorial in Edinburgh on a day to be fixed by the naval, military, and Air Force authorities in that country.

## Foreign Officers in the R.A.F.

The following foreign officers have been, or are shortly being, attached to R.A.F. units:—

Lt. Sami bin Abdul Fattah (shortened name Sami), Lt. Muhammed bin Yasin (shortened name Yasin), Lt. Naji bin Ibrahim (shortened name Naji), to No. 5 F.T.S. on September 30.

Lt. Bahjat bin Rauf (shortened name Bahjat), Lt. Irmayah bin Nasir (shortened name Irmayah), to No. 3 F.T.S. on October 28.

Capt. Hamalainen (chief of the Finnish Mechanics' School) and Lt. Haatanen (of the Finnish Flying School), to School of Technical Training, Halton (October 6-31).

Both latter officers will proceed early in November for a few days to the Home Aircraft Depot, Henlow, in order to study the organisation of, and work carried out by the unit.

## Westland Aircraft Society Annual General Meeting

The fourth annual general meeting of the Westland Aircraft Society was held in the works canteen at Westland Aircraft Works on Thursday last, some 80 members being in attendance.

In the absence of the president, R. A. Bruce, Esq., O.B.E., who is in the United States, Capt. A. S. Keep, M.C., B.Sc., A.F.R.Ae.S., occupied the chair, and said that the meeting was to inaugurate the fifth session of the society, and remarked upon the steady progress made in the past and of the promise shown by the excellent syllabus of lectures attached that this was to be maintained.

Apologies had been received from Sir Ernest Petter, Kt., Alderman P. W. Petter, J.P., R. J. Norton, Esq., and E. M. Benjamin, Esq., for their inability to attend the meeting.

R. A. Bruce, Esq., was unanimously re-elected president, and the following officers were re-elected: hon. secretary, Mr. V. S. Gaunt, A.M.I.Ae.S.; hon. treasurer, Mr. J. Johnston, A.F.R.Ae.S.; hon. assistant secretary, Mr. H. J. Penrose, A.F.R.Ae.S.

Mr. Gaunt, in presenting the report for the past session, said he desired to thank Messrs. Petters for accommodation and other facilities and for the appointment of a secretarial assistant, Mr. C. J. King; Mr. F. W. Cole for the use of the lecture room at the Three Choughs Hotel; and Mr. Biggin for the use of the meeting room at the Half Moon Hotel; also the local and technical Press for publicity.

Mr. Johnston presented a balance-sheet showing a very favourable credit balance with which to commence the new session. After proceeding to ballot, the committee was declared constituted as follows:—Mr. F. J. Wingfield-Digby, A.F.R.Ae.S.; Mr. H. Mettam, M.A., A.F.R.Ae.S.; Mr. W. Geo. Gibson, A.R.Ae.S.; Mr. W. J. Pomeroy; Mr. A. Watson; Mr. A. Haysom.

From the syllabus it will be observed that lectures of very varied interest have been arranged, and members joining now are assured of good value for their money as the subscription is only 5s. per annum.

## AIR POST STAMPS

By DOUGLAS ARMSTRONG

WITHIN the last few months the ranks of the aero-stamp issuing countries of the world have been augmented by Belgium, France, and Sweden. Spain is also about to fall into line, so that in the near future Great Britain is likely to be the only considerable European nation that does not provide distinctive stamps for use on air-borne letters. At a time when the government is in urgent need of money with which to subsidise commercial aviation, it is the more remarkable that so obvious and convenient a means of raising the wind should be deliberately neglected. The Air Ministry, we are informed, is sympathetic to the idea of a British air stamp: the Postmaster-General alone remains obdurate. It is hard to understand what difficulties or objections, (if any?) lie in the way of the introduction of special air post stamps into this country, that have not been successfully overcome by other postal administrations.

The official attitude is explained in a recent communication from the manager of the Imperial Airways to a correspondent, in which it is stated that "The whole object of air mail is simplicity, and if it is necessary for a person desiring to send an air mail letter to purchase a special stamp at the post office, then the matter immediately becomes complicated, and air mail might not be used to the extent desired." All of which sounds very reasonable until we stop to consider that it should be no more difficult to purchase a special stamp than to beg for an air mail label, as is the case in England to-day, and that in countries where air mail stamps are in actual service the air mail is patronised much more extensively than it is with us. The experience of other countries points, moreover, to the air mail stamp being an excellent advertisement for the service, and it is hardly reasonable to suppose that conditions in Great Britain differ so greatly from those obtaining in the self-governing Dominions, practically all of whom employ distinctive air post stamps.

The fact that countries like Sweden, Spain, Holland and Italy, after discontinuing the use of such stamps for a time have found it expedient to revert to them, suggests that sooner or later our own Post Office mandarins will have to yield to public opinion, which is almost unanimous in favour of this innovation. We can only hope that it may be sooner.

### Issues in Prospect

Further additions to the already extensive list of South and Central American air stamps may be anticipated as the outcome of the opening-up of a new air post line from Buenos Aires to New York by way of Cayenne, Paramaribo, Georgetown, Port of Spain, Caracas, Martinique, Guadeloupe, San Juan, Santo Domingo, Port au Prince, Santiago, etc. The through rate from Buenos Aires to New York will be 80 cents (U.S. currency), whilst from Brazil, Uruguay, the Guianas and Venezuela the air post fee is 70 cents in each case.

Air post stamps from Dutch Guiana (Surinam) are, in fact, already foreshadowed in denominations 10 cents red, 15 c. blue, 20 c. green, 40 c. orange, 60 c. violet, 1 florin black, and 1 fl. 50 c. brown—all recess-printed by J. Enschede and Sons in a design by Andre van der Vossen representing three birds and an aeroplane in flight.

Venezuela is about to add two extra high values to her current air stamp series, whilst air post issues from Jamaica, Trinidad, British Guiana, Guadeloupe, and Porto Rico are not unlikely contingencies.

It is rumoured that the New Zealand post office department will provide in future stamps of a distinctive character for use on the newly inaugurated air mail service to England via Karachi. Meanwhile there is some talk of overprinting the current 3d., 4d., and 7d. stamps with the words "Air Mail."

The Bahamas colony in the British West Indies is reported to have a 6d. air mail stamp in course of preparation, and there are persistent rumours of a similar issue from British Honduras. A series of Iraq air mail stamps engraved with characteristic local views is momentarily anticipated.

### Air Post Publications

The growing popularity of air post collecting as a hobby has created a demand for a special album designed to accommodate air stamps of the world. This long-felt want has now been supplied by an American firm, which has produced at the popular price of 16s. a well planned and illustrated volume providing spaces for all officially issued air mail stamps down to the end of 1929. It is to be hoped that future editions will be extended so as to include the quasi-official air post issues of Canada, Colombia, Greece, etc. The Air Mail album is also available in a more expensive binding on the loose-leaf principle.

## CONSTRUCTORS' SPECIAL NOTICES

De Havilland Notices to Owners and Users of Gipsy II and Gipsy III Aero Engines

*Cruising speed of Engines.*—The Airworthiness Handbook, Air Publication 1208, Design Leaflet D.1, Paragraph 8, states: "An engine speed warning plate showing the normal and maximum revolutions per minute, as specified in the Certificate of Airworthiness, must be fitted on the dashboard in the pilot's cockpit."

The Certificate of Airworthiness states: "The speed of the engine must not exceed 2,000 r.p.m., except for short periods. It must never exceed 2,200 r.p.m., and must not be maintained at that figure for more than five minutes at a time." (N.B.—The figure of 2,200 r.p.m. has recently been increased to 2,300 r.p.m.)

The de Havilland Aircraft Co., Ltd., wish to make it clear that the normal figure quoted above has no bearing on the practical operation of the engine, and should, therefore, be disregarded. In the interests of owners and operators of machines fitted with these engines, and in the interests of the de Havilland Aircraft Co., Ltd., as manufacturers of these engines, the company hereby advise and recommend that the most suitable cruising speed of both these engines is between 1,800 and 1,900 r.p.m. At this speed, and utilising a suitable propeller, petrol consumption should be 5 to 5½ gallons per hour.

(No. 1, October 10, 1930.)

## PUBLICATIONS RECEIVED

*Aeronautical Research Committee Reports and Memoranda:* No. 1311 (Ae. 450).—Wind Tunnel Tests on Gloster and Supermarine Wing Radiators. By R. G. Harris, L. E. Caygill, and R. A. Fairthorne. June, 1927. Price 9d. net. No. 1319 (Ae. 455).—Moments and Forces on a Yawed Model Aeroplane. By W. G. A. Perring and C. Callen. February, 1930. Price 4d. net. No. 1321 (Ae. 458).—Maximum Lift Coefficient of R.A.F. All-Moving Rudder. By F. B. Bradfield. February, 1930. Price 4d. net. No. 1327 (Ae. 460).—Wind-Tunnel Tests of Seven Struts. By A. S. Hartshorn, B.Sc. November, 1927. Price 9d. net. H.M. Stationery Office, Kingsway, London, W.C.2.

*Aeronautical Research Committee Reports and Memoranda.* No. 1302. (Ae.445). The Stresses in a Radially-Spoked Wire Wheel under Loads Applied to the Rim. By Prof. A. J. Sutton Pippard and W. E. Francis. February, 1930. Price 2s. 3d. net. No. 1308 (Ae.448). A Micromanometer of High Sensitivity. By E. Ower. February, 1930. Price 9d. net. No. 1312. (Ae.451). The Stability of a Body Towed by a Light Wire. By H. Glauert. February, 1930. Price 1s. 3d. net. No. 1316. (Ae.453). Charts for Aircraft Performance Reduction. By H. L. Stevens and A. E. Woodward Nutt. April, 1930. Price 1s. net. H.M. Stationery Office, Kingsway, London, W.C.2.

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